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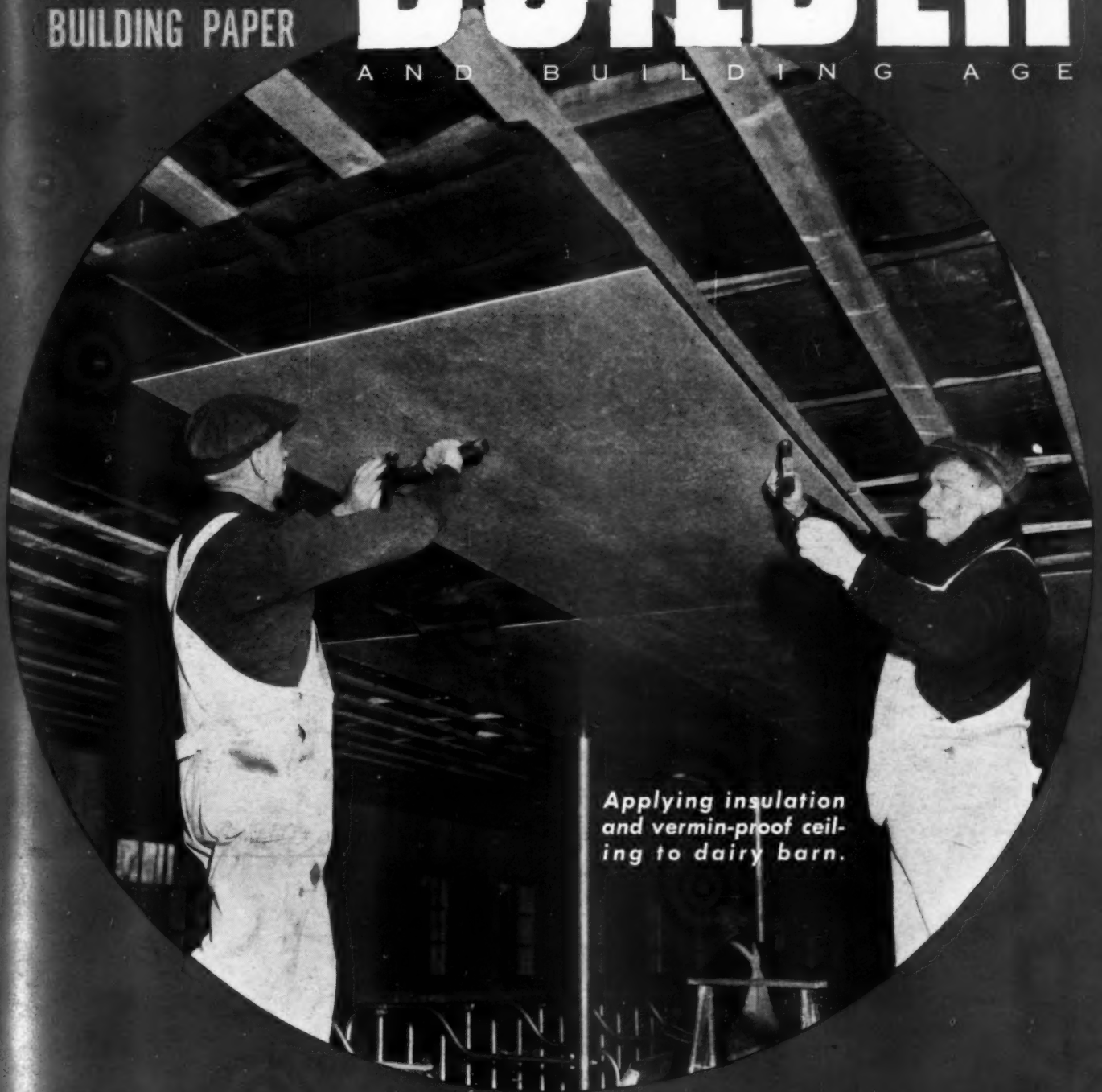
AMERICAN BUILDER

AND BUILDING AGE

AUGUST, 1943
PRICE 25 CENTS
30 CENTS IN CANADA

WORLD'S GREATEST BUILDING PAPER



Applying insulation and vermin-proof ceiling to dairy barn.

WANTED—Thousands of Farm Builders

Important news ABOUT THE FUTURE FOR EVERY BUILDER IN AMERICA!

"You Bet I'm Going to Own a Miracle Home"
CELOTEX
The Miracle Homes of Tomorrow will be owned by families of average means with WAR BONDS PUT AWAY TODAY!
"We're going to live in a Miracle Home!"
John Smith Average American
...WITH WAR BONDS BOUGHT TODAY!
WILL OWN THIS "MIRACLE HOME" TOMORROW
CELOTEX

The amazing response to the Celotex "Miracle Home" campaign shows that people are planning now for post-war homes!

SINCE the first of the year, The Celotex Corporation has featured a "Miracle Home" each month in its national advertising . . . each home designed by a leading architect. The function of this continuing program is to stimulate the interest of America in building and owning homes after the war.

The campaign is bringing in thousands of inquiries. Every one of them is sent to Celotex Dealers who use them in building up a prospect list. Every one of these inquiries represents a family that's interested in building a home after the war . . . folks who are buying War Bonds now and planning on using them as the down payment. These are real prospects for you! And we suggest that you work with your local Celotex Dealer in advising and helping these prospects with their plans so that when the war is over you'll have a market that's already sold and ready to start building without delay.

We at Celotex are determined to build this "after-the-war" market for you. And we will continue to use all the merchandising and selling methods that will help make home ownership the *number one desire* of every family in America.

WRITE US for a copy of the portfolio we are sending out in response to requests from readers.

CELOTEX

REG. U. S. PAT. OFF.

ROOFING • INSULATING BOARD • ROCK WOOL
GYPSUM WALL BOARD • LATH • PLASTER
SOUND CONDITIONING PRODUCTS

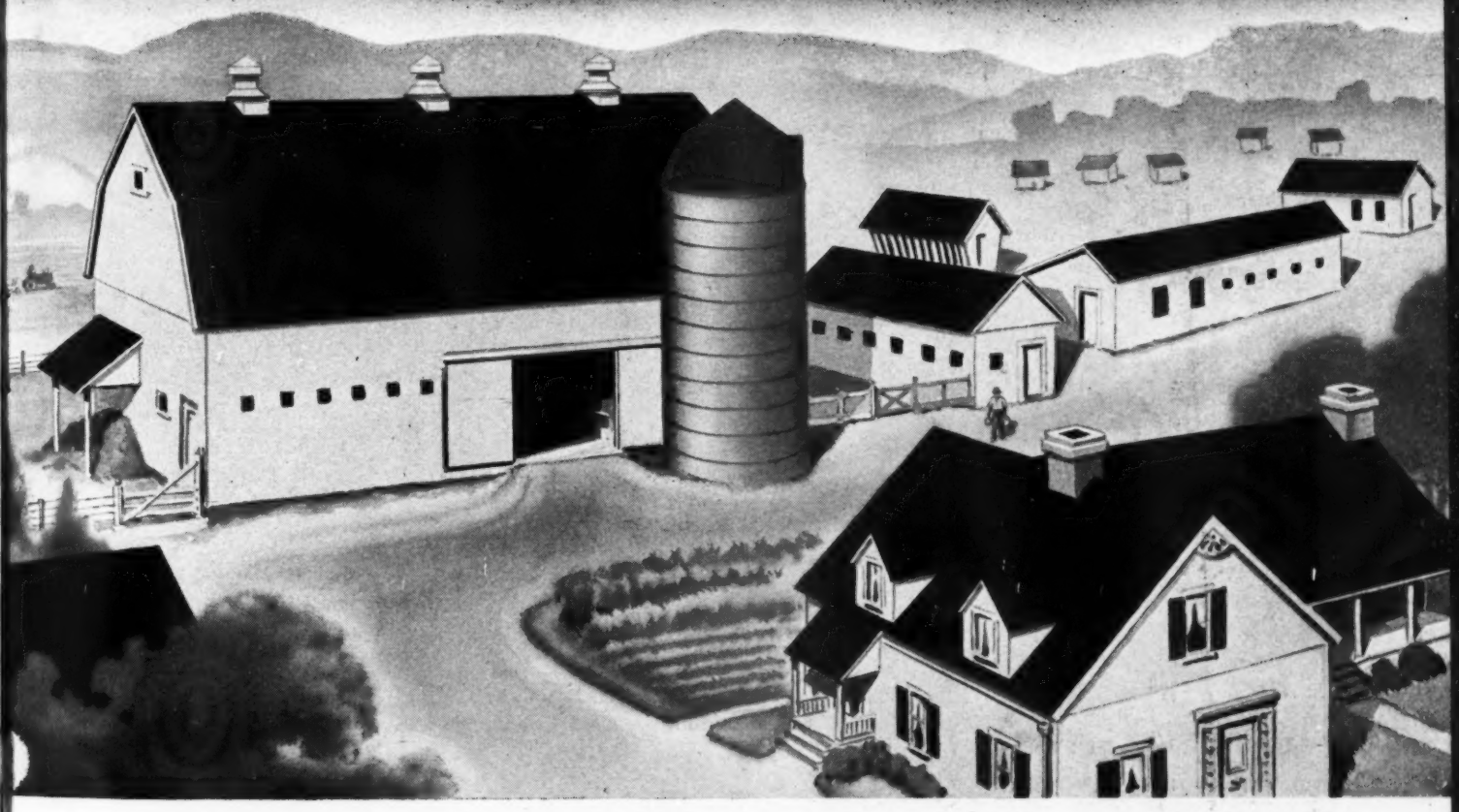
THE CELOTEX CORPORATION • CHICAGO

Published monthly by Simmons-Boardman Publishing Corporation, 105 W. Adams St., Chicago 3, Ill. Subscription price, United States, Possessions, and Canada 1 year $2.00; 2 years, $3.00; foreign countries: 1 year, $4.60; 2 years, $7.00. Single copies, 25 cents. Entered as second-class matter Oct. 11, 1930, at the Post Office at Chicago, Illinois, under the act of March 3, 1879, with additional entry as second-class matter at Mount Morris, Illinois. Address communications to 105 W. Adams St., Chicago, Ill.

DeWALT

CUTTING MACHINES

help build and maintain farm buildings



Today—when all farm production is so important to the war effort—it is essential that farm buildings be built and maintained efficiently. DeWalt Cutting Machines have long been *custom-cutting* farm buildings in quantity. To help relieve the critical situation in lumber, DeWalt again comes to the front by re-working any lumber into usable material. Sturdy, flexible, dependable—DeWalt Machines do their cutting with a precision heretofore unknown.

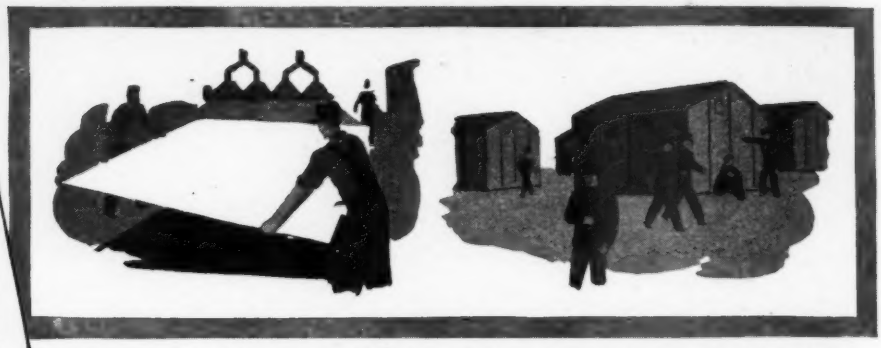
DeWALT PRODUCTS CORPORATION
Lancaster, Pennsylvania

STALWART SOLDIERS FROM THE NORTH

These crop trees, a natural resource of the northwoods, and thousands like them, are transformed by modern science and engineering into products that build comfort and protection for the United Nations at war, and for civilians in peace time.

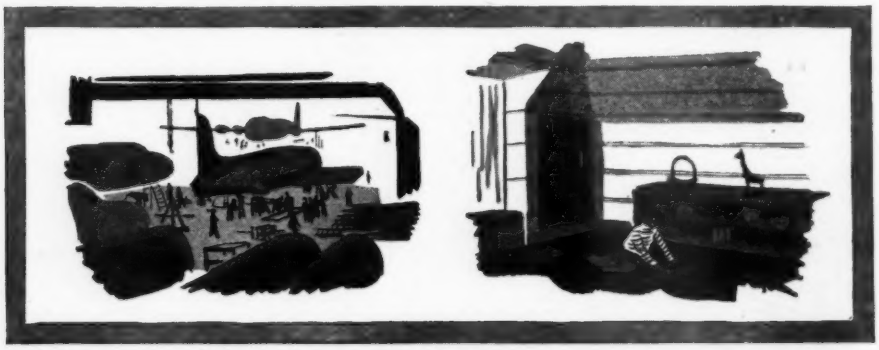
● The average person thinks of trees only in connection with lumber. But from the cellulose fibres of trees (not the trees used for lumber) come a multitude of useful products. Clothing, surgical dressings, even fuel to run automobiles—these are a few of the more unusual products being made from wood today.

● More than a quarter of a century ago, in the mills of the Minnesota and Ontario Paper Company, at International Falls, Minnesota, scientists, working in research laboratories, discovered a method of fabricating wood fibres into boards that were superior, for many building purposes, to wood as nature made it.



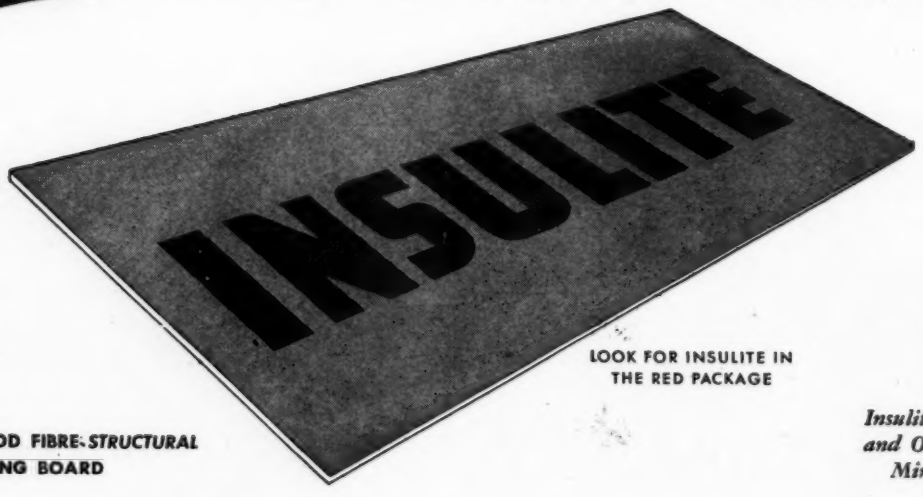
● Logs are placed into giant machines that tear them to pieces leaving only the sturdy fibres. Then the fibres are processed into boards — called INSULITE. These boards have a bracing strength four times that of ordinary wood sheathing, horizontally applied.

● Insulite has many important uses. Today, in many corners of the world, the advantages of Insulite are bringing comfort to our fighting men, thousands of whom are housed in barracks built of Insulite. Insulite is moisture-proofed, wind-proofed, provides sound control, and is treated against termites, rot and fungi.



● Insulite has many structural advantages. Today, speed in building is highly important. The large panels of Insulite are rapidly applied or nailed into place. The saving in building time is apparent when you consider the large area the panel of Insulite covers in one operation. This bomber factory is only one war plant that was erected and completed in record time with Insulite.

● In home construction Insulite finds its widest use. Because Insulite insulates as it builds, walls constructed with Insulite save fuel in winter, make rooms cooler in summer. When used to finish attic interiors, like the one shown, Insulite provides attractive walls and ceilings that require no plastering, papering or painting. Walls of Insulite are also easy to clean.



LOOK FOR INSULITE IN THE RED PACKAGE

THE ORIGINAL WOOD FIBRE STRUCTURAL INSULATING BOARD

Insulite Division of Minnesota and Ontario Paper Company
Minneapolis, Minnesota

U. S. BULLETIN ★ AUGUST

AVAILABLE HEATING EQUIPMENT

for essential boiler replacements conversion and repair parts

U. S. BOILERS ARE AVAILABLE for essential civilian replacements, and for the military, hospitals and war housing projects.

CONVERSION AND REPAIR PARTS on both steel and cast iron boilers can be supplied at this time. Now is the time to urge owners to purchase such parts and installation of them while we are in a position to supply them promptly.

PACIFIC STEEL BOILERS are obtainable and can be delivered on certain priorities. We suggest you communicate with Pacific Steel Boiler Division of U. S. Radiator in connection with your requirements.

U. S. RADIATOR IN THE WAR

Tank Treads are being machined in United States Radiator Corporation plants. U. S. Radiator is casting magnesium for war production.

Caisson Gates for warship dry docks are being pre-fabricated by Pacific Steel Boiler Division.

In These and other ways United States Radiator Corporation is in the war . . . and learning new and better methods which can be applied to post-war production.

US RADIANT WARMTH

UNITED STATES RADIATOR CORPORATION

AND

PACIFIC STEEL BOILER DIVISION

Detroit, Michigan · Branches and Sales Offices in Principal Cities

Manufacturing Plants At:

Bristol, Pa. · Detroit, Mich. · Dunkirk, N. Y. · Edwardsville, Ill. · Geneva, N. Y. · Waukegan, Ill. · W. Newton, Pa.

What 877 contractors have to say about dry-built full-wall construction

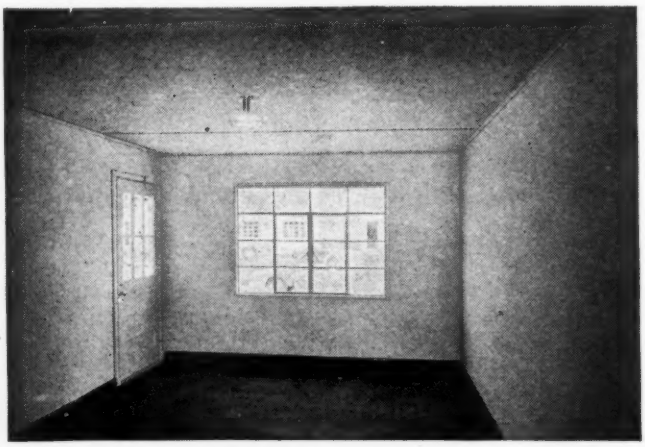
Do they like it? *They do!*

A large independent research organization recently conducted an impartial and thorough fact-finding survey. Building contractors, chosen at random in cities, towns and villages from coast to coast, voted overwhelming approval of this new building development for small homes.

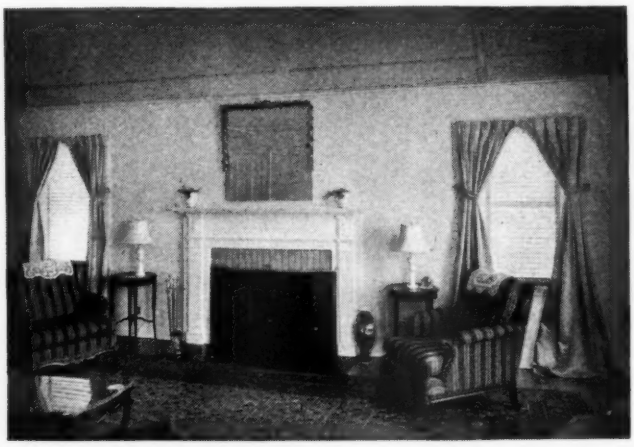
Why do contractors approve single-panel walls? Here are the leading reasons in the order contractors rated them . . .

1 SAVES BUILDING TIME. *Contractors voted the time-saving advantages of dry-built full-wall construction into the Number One position. (FACT: Users of Strong-Bilt Panels report shortened construction time on both conventionally built and prefabricated homes.)*

2 SAVES LABOR COST. *One panel covers an entire wall of the average home. Floating Fasteners anchor panel securely from rear. No face nailing. No nail holes to fill. No joints to tape or hide. (FACT: The application of Strong-Bilt Panels involves fewer operations than most other types of interior wall.)*



3 NO PLASTER TO CRACK. *Eliminates a costly source of trouble and complaints for the builder. Reduces maintenance expense for the owner. (FACT: Walls and ceilings of Strong-Bilt Panels remain forever crackproof.)*



4 NO MOISTURE TROUBLE. *Trim and flooring are not exposed to the 1000 pounds of water which may be used in plastering an average small home. (FACT: Strong-Bilt Panels introduce no water or excess moisture into a home.)*

OTHER REASONS receiving important mention: (5) beauty of the unbroken surface of a full wall (6) cleaner—no mess to clean up after installation. For booklets picturing the advantages of *dry-built full-wall* construction, both in conventional and prefabricated homes, write The Upson Company, Lockport, New York.

Upson Quality Products Are Easily Identified By the Famous Blue-Center

UPSON PRODUCTS

UPSON
STRONG-BILT
PANELS

THE CRACKPROOF BEAUTY SURFACE FOR WALLS AND CEILINGS

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AMERICAN BUILDER AND BUILDING AGE

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Field Staff: C. L. Conley, J. H. Free, Ralph I. Henry, Woodrow James, W. L. Taylor, Dick Whittington.

Letters from Readers

Facts, Opinions and Advice Welcomed Here

L-41 can be rescinded early

Seal Beach, Calif.

To the Editor:

Your post-war program is sound. WPB L-41 could be rescinded soon after we win in Europe. My experience in the Orient during World War One leads me to think our war there may be a long one, but we should get back to constructive work early to pay our taxes out of other than *deficits*.

Am in accord fully with all your planks other than No. 7. Here it seems to me a 5 per cent down payment, allowing second T/D's to the builder, with careful check of the home buyer's credit should be reasonably secure. This would permit the builder to get off the paper and thus enable the little builder to keep going. I like 5 per cent down better than nothing down on lease-option.

The housing need here is so great I have changed my mind and am getting set to build 125 more units.—PHILIP NORTON,

Faith and thrift

St. Louis, Mo.

To the Editor:

I like your private enterprise program. I urge the importance of private enterprise wherever I go—96 cities in 31 states so far this year.

Under private enterprise our people have attained a scale of living never before dreamed of by any other people on the face of the globe.

It was faith and thrift that built America. Don't ever let any crackpot tell you anything except faith and thrift will rebuild America.—CYRUS CRANE WILLMORE.

Likes "How-To-Do-It"

Oakland, Calif.

To the Editor:

Please send me your book "Shop Crafters' Manual." I am a subscriber to *American Builder* magazine: it is getting better month by month. Fence and gate ideas worked out is what we like.—WILLIAM FIALHO.

We like voltage

Flint, Mich.

To the Editor:

We are building three hundred of these homes this year (p. 38—June *American Builder)* which represents a very substantial increase in our production. Some day we'll give you a complete story with pictures. Just one correction—the room in the attic *must* be finished at time of building in order to qualify for lumber count.

I want to personally congratulate you on the marvelous improvement in your publication. Plenty of voltage. You deserve the co-operation of the industry. More power to you.—ROBERT GERHOLZ, Gerholz Healy Co.

Less radical architects

Schenectady, N. Y.

To the Editor:

Your magazine has done a good deal to counteract the reckless predictions regarding drastic, revolutionary and staggering changes predicted by certain radical architects and sponsored by some sections of the press and other periodicals. Good work.—RALPH BLANK, Wagg, Inc., of New York.

Will campaign locally

Topeka, Kan.

To the Editor:

American Builder is to be commended with high praise for the campaign on post-war home building. I agree with the logic being set forth in your feature articles, and believe you are supplying the textbook for all of us in building.

I am thinking about a companion campaign to go to the grass roots of each community—have suggested the plan to our Chamber's president here—and received an enthusiastic response.—W. L. HANDLEY, Better Homes Company.

Supply homes economically

New York, N. Y.

To the Editor:

I note with much interest the attention which the *American Builder* is currently devoting to the important problem of post-war home building and the necessity of giving thought to this problem today. As you know, we have always consistently furthered the interests of fine building and it is my belief that private industry can well take time out, even in the midst of war, to consider what means it can employ to stimulate sound post-war building.

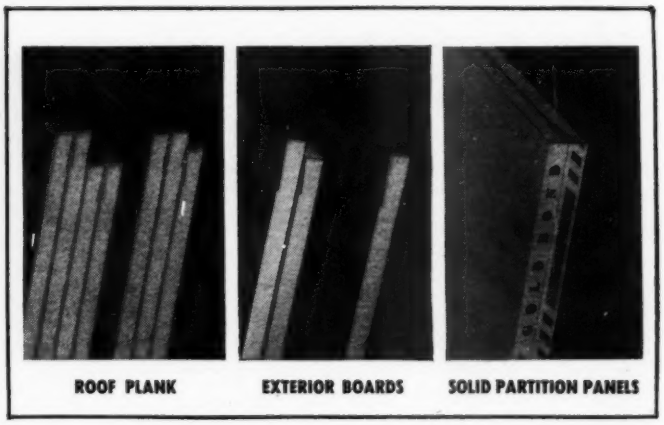
Private building apparently is giving repeated demonstrations that it can supply homes economically and quickly and I think it can do so after the war with equal dispatch.—F. E. WORMSER, Secretary, Lead Industries Association.

ANOTHER EMERGENCY JOB LICKED BY GOLD BOND GYPSUM ROOF PLANK

Speed counts these days. Emergency buildings take form almost overnight—and Gold Bond Gypsum Roof Plank is one of the big time-savers!

These fireproof gypsum planks, 2′ wide and up to 10′ long, fairly eat up large areas. Offset edges on long sides for snug-fitting joints.

For flat or pitched roof decks. The moment the sturdy gypsum planks are nailed in place, the roofers move in. No waiting for materials to dry!



SEE YOUR GOLD BOND DEALER

THE Gold Bond Gypsum Building Boards pictured above—Roof Plank, Exterior Boards and Solid Partition Panels—really broke the lumber bottleneck in emergency construction. Millions of feet of these products developed by National Gypsum Research have been used in the construction of army camps, naval stations and industrial buildings.

Now they are doing an equally good job for private industry and farmers in providing materials for essential wartime construction and repairs. These boards require no special skills. They handle like lumber. They are sawed and nailed in exactly the same way. And plenty of all three are available today at your Gold Bond Dealer's.

BUILD BETTER WITH

Gold Bond

Everything - for walls & ceilings

More than 150 different products for MODERN CONSTRUCTION AND WAR PRODUCTION

WALLBOARD...LATH...PLASTER...LIME
METAL PRODUCTS...WALL PAINT
INSULATION...SOUND CONTROL

NATIONAL GYPSUM COMPANY . . EXECUTIVE OFFICES, BUFFALO, N. Y.

21 Plants from Canada to the Gulf . . . Sales offices in principal cities

Publisher's Page

War Powers for Post-War Purposes

WE saw a Government planned and spending economy tried on a large scale before the war. It completely failed to cause recovery—in fact, prevented it. We are now seeing it tried during the war on the most gigantic scale in history. All the national resources previously created by nature and private enterprise have been placed at governments' disposal; and employment and production have enormously increased. But why not, when the federal government's expenditure of our resources increased from $9 billion in the year ended June 30, 1940, to $80 billion in the year ended June 30, 1943—of which $72 billion were for war?

Everybody hopes that the planning and spending for war will result in speedy victory. Everybody also wants them so done that they will not disrupt our national economy, and prevent freedom and prosperity after the war. For the war is being fought *solely* to make the world, and especially our country, a better place in which to live after the war. And, unfortunately, it is far from certain that this will be the outcome.

Excepting to increase production and our military power, the most important battles being fought on the home front are those to prevent inflation and to save private enterprise. And the government planners, while ostensibly using certain agencies only to prevent inflation, are actually using them to destroy private enterprise. The Office of Price Administration was created solely to prevent inflation. On July 14 Lou R. Maxon announced his declination to become general manager of this agency, resigned all connection with it, and declared in a public statement: "There is a strong clique in OPA who believe *the government should manufacture and distribute all commodities* * * * They are using the war as a means of furthering their 'reform' ideas."

OPA regulates rents as well as prices. Therefore, the building industry has a vital interest in its conduct. For rents can be so regulated as to prevent private building. And already costs of owning housing and other buildings have been allowed to increase much more than rents. Carried into the post-war period, this policy would prevent construction and ownership of buildings by private enterprise, because making them unprofitable. It would thus strengthen the planners' argument for government construction and ownership.

There is reason for controlling rents in war. There is no reason in war or peace for allowing costs to rise more than rents—unless it be to destroy profits. And to destroy profits from property is the same to the owner as confiscation or destruction of the property.

"On the security of property," wrote Macaulay a century ago, "civilization depends. Where property is insecure, no climate however delicious, no soil however fertile, no conveniences for trade and navigation, no endowments of body or of mind, can prevent a nation from sinking into barbarism." All in close contact with the New Dealers agree they are trying to use the government's war powers over wages, prices and rents to curtail or destroy private profits and the security of all property. Nor can there be any question that, if allowed, they will continue this process after the war to complete the destruction of private enterprise and property, and establish totalitarianism on the Russian Communist or the German Nazi model.

The only salvation for the American system is to resist the government "planners" to the utmost now, and prepare to throw them out at the first opportunity.

Samuel O. Dunn,

AMERICAN BUILDER and BUILDING AGE (originally "Carpentry and Building"), with which are incorporated National Builder, Permanent Builder and the Builder's Journal was founded Jan. 1, 1879. Name registered in U. S. patent office and Canadian registrar of trade mark.

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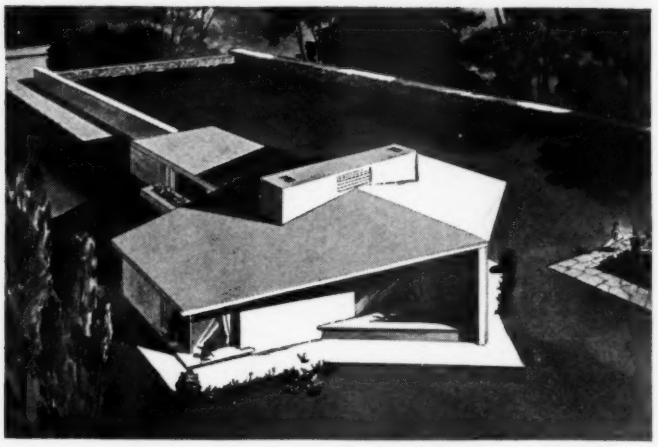
Member of the Associated Business Papers (A. B. P.) and of the Audit Bureau of Circulations (A. B. C.) PRINTED IN U. S. A.

How Heating Contractors Can Avoid Post-War Heating Headaches

Prospective Home Builder: "We are about to build a new home. It's the type of home we've always wanted. Some dealers have told me I can't get a power burner that will heat it efficiently because it's small and requires a firing rate of less than one gallon of oil per hour. How about it? Here's the home I want—and oil is the fuel I want."



The Home: This "Victory Home," currently featured in Timken national advertising, designed by D. Allen Wright, is thoroughly insulated, efficiently arranged, easy to keep up and easy to heat—and the firing rate is less than one gallon of oil per hour. It will never be a headache for heating contractors who sell Timken Silent Automatic Products!

Timken Heating Contractor: "The Timken Wall-Flame Oil Burner is the only type of power burner capable of operating efficiently, dependably and quietly at firing rates as low as 1/3 of a gallon of oil per hour. Timken's long life and economy of operation, so widely known before the war, *so conclusively proved during the war,* make Timken the only buy for post-war builders of small homes."

"Follow the Trend—Turn to Timken"

"Timken not only has the only power burner capable of operating efficiently and dependably at such low firing rates, but Timken's quality products and proved economy give me the edge on *all* types and sizes of homes. And Timken's *other products* for the home round out my business in fine style. I like the way Timken backs up dealers, too, with national magazine and newspaper advertising and effective sales and service helps."

NOTE TO DEALERS: Plan now to profit from selling Timken Products in the post-war building boom. Write us today!

ARMY E NAVY
For Production "Well Done"

TIMKEN *Silent Automatic*

OIL HEATING PRODUCTS FOR THE HOME

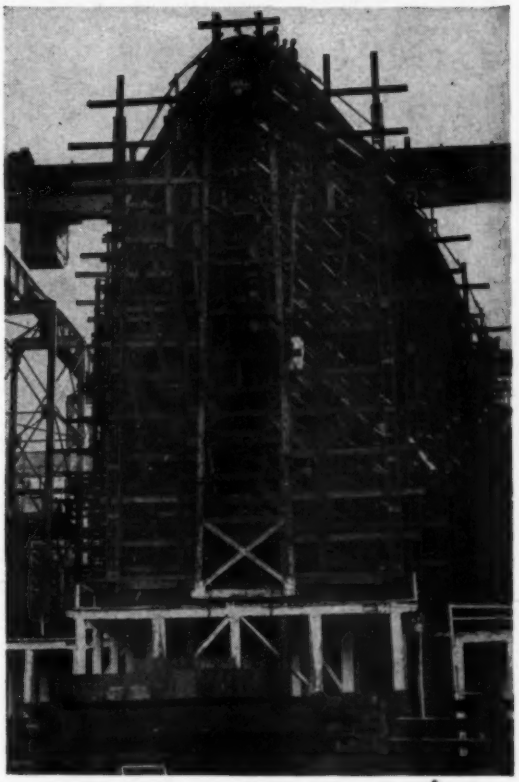
Division of THE TIMKEN-DETROIT AXLE COMPANY, Detroit, Michigan

"Damn the torpedoes— full speed ahead!"

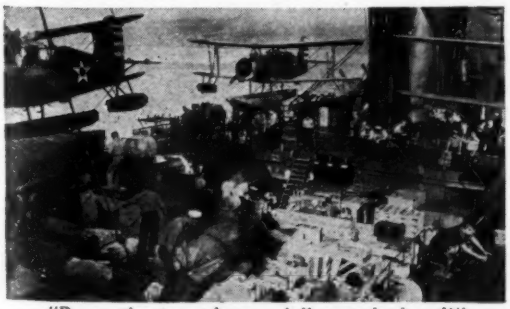
Farragut's immortal battle cry at Mobile Bay keynotes America's answer today to Germany's U-boat wolf pack. Bigger cargo fleets must meet Hitler's challenge with two new ships for each one sunk . . . with others building in swift succession. Only with ships can we win the battle of the Atlantic or supply the boys "down under."

To this primary nerve center of America's war effort, lumber is flowing in enormous volume: for ship ways and scaffolding in every yard; for ship interiors and furniture; for packaging munitions and material which comprise their countless fighting cargoes.

With our fellow manufacturers of the industry, we are committed to the proposition that ships and cargo packaging come first; that lumber needed for both shall be supplied to the utmost of our resources and facilities, so that America's service of supply shall not fail a single front line fighter.



Over 300,000 board feet of lumber in this scaffold!



"Damn the torpedoes — full speed ahead!"
—Official Photograph U S Navy

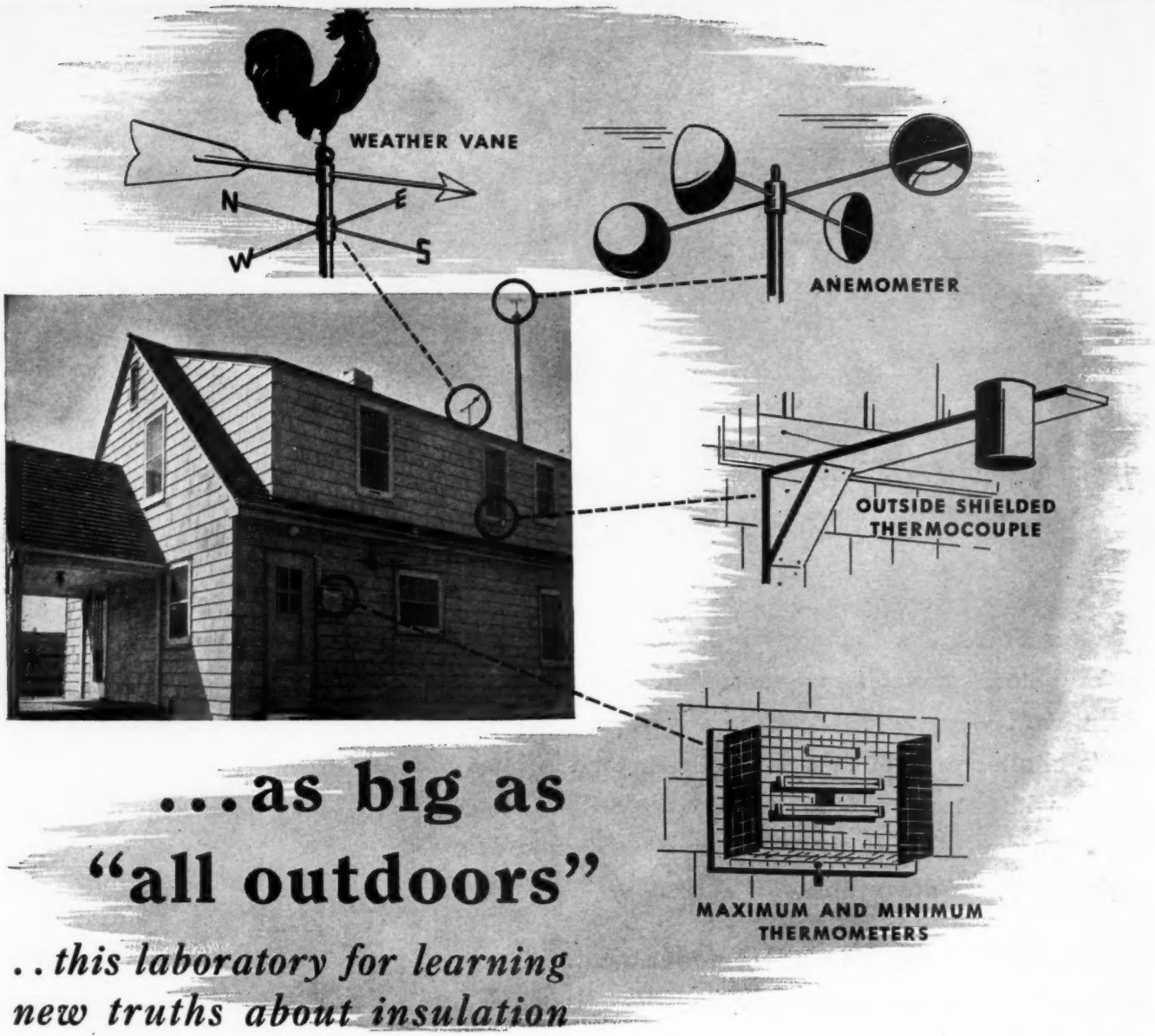
BRADLEY BRAND

Bradley Lumber Co. *of Arkansas*

WARREN, ARKANSAS

★

BUY WAR BONDS FOR VICTORY



...as big as "all outdoors"

..this laboratory for learning new truths about insulation

Wood Conversion Company recognizes that Hot Box and Hot Plate tests on insulation are important. But we also realize that laboratory tests have definite limitations . . . they do not go far *enough* in disclosing all the facts about insulation.

That is why we built four identical test houses so that insulation results could be studied under *actual conditions of service* . . . in a laboratory as big as "all outdoors," with actual temperature variations from 18 degrees below zero to 78 degrees above throughout an entire heating season.

New facts and figures were gained from these tests—new and more exact knowledge of insulation performance. For example, it is now possible to determine exactly how much fuel can be saved by insulation—exactly how thickness of insulation affects its efficiency—exactly what effect basement and attic temperatures have on heat loss.

To give you the latest findings on insulation, we have embodied the results of the Wood Conversion tests in a report originally presented to the American Society of Heating and Ventilating Engineers. We will gladly send you a copy of this report on request—and with no obligation on your part. Mail the coupon!

Balsam-Wool
SEALED INSULATION

WOOD CONVERSION COMPANY
Dept. 119-8, First National Bank Bldg.
St. Paul, Minnesota

Please send me complete scientific data on the Wood Conversion Company insulation tests.

Name.....

Address.....

City.....State.....

~~Time Out for Repairs~~
~~Costly Replacements~~
~~Bottlenecks · Penalties~~

Eliminate these Hitler Weapons from your War Plant

Announcing the Improved

UNI-POINT RADIAL SAW

VITAL PARTS OF HARDENED STEEL

Men may come and men may go, but UNI-POINT* saws on forever! With vital parts now made of hardened steel these tireless wood-working machines will give you profitable dependability not only under the forced draft of wartime production but for the important era of post-war development.

Hardened Steel Ways and Bearings

The UNI-POINT Radial Saw now comes with a hardened steel ram with hardened steel ways and bearings. This superior construction, new to radial saws, not only postpones indefinitely replacement of these vital parts but provides feather-light, finger-touch operation of the telescoping ram, and assures a higher-than-ever degree of permanent accuracy.

Can you put off any longer the installation of one or more of these time-saving, profit-making UNI-POINT RADIAL SAWS which have been proved to give a woodworker increased production of as much as 100% to 200% or more? Investigate now.

★ UNI-POINT cutting means that the saw always enters the wood at same point on table regardless of type of cut—saving much time and insuring greater accuracy.

Three New Reasons Why Uni-Point Construction Meets Today's Demand!

1. *Hardened steel* telescoping ram (A).
2. *Hardened steel* ways (B) in the housing, for permanent accuracy of the ram.
3. 32 oversize precision-ground *hardened steel* roller bearings (C) in the housing, to assure accuracy, long life and finger-touch operation of the ram.

Hardened steel ram, riding on hardened steel roller bearings, on hardened steel bearing ways—nothing else to wear out!

Write for Catalog 60

Prompt Deliveries Against High Priority.

We also manufacture "modern design" Saw Benches, Band Saws, Jointers, Planers, Lathes, Shapers, Mortisers, Sanders, Swing Saws. Also a complete line of Saw Mill machinery.

MONARCH
UNI-POINT RADIAL SAW

AMERICAN SAW MILL MACHINERY CO.
HACKETTSTOWN, NEW JERSEY

On and Off the Record

News, Views and Comments

ARE WE READY?—Fast moving war events are bringing the possibility of victory in Europe this year much closer. Will the building industry be ready with a post-war plan? Many persons and groups have definite plans, it is true, but there are sharp differences of opinion that need to be settled. *American Builder* will devote its entire issue in October to this subject and try to set forth the best thinking of the men of the industry.

WHAT DOES ABNER DO?—In my opinion the Federal Housing Administration has shown a deplorable lack of leadership in regard to post-war planning. In fact we might say Abner Ferguson, the titular head of FHA, has not displayed a capacity for active or aggressive leadership of any kind.

If FHA had had a top man with guts, it could have run the whole war housing show, instead of taking the severe beating it has.

The Canadian Housing Administration, on the other hand, presents a sharp contrast. Its top officials and its whole organization have been active in defense of private enterprise. They have been in there pitching all the time to get privately built houses constructed, and are working on a most ambitious post-war program.

ADVANCE PROCESSING—One idea FHA might consider is the advance processing of post-war projects. Builders might be encouraged to lay out subdivisions now, draw plans, and put them through the FHA mill. Thus when the go sign is given they will be ready to start without delay.

POST-WAR TITLE VI—I still feel that some type of post-war Title VI plan to encourage rental housing and the sale of houses on the lease-option basis should be developed. There are thousands of estate properties and millions of dollars of investment capital interested in such projects. Private builders have shown they can function under such a system because it is flexible and has many workable features.

RENTAL HOUSING TO INCREASE—Increasing numbers of builders are realizing that under present (and probably future) income tax laws, rental housing is a better bet than outright sale. If a builder sells fifty houses in one year, most of the profits will be wiped out in income taxes. But on a rental project the income is spread over a number of years. Similarly the lease-option plan which distributes the sale of houses over a period of years also distributes the profits, and hence the income tax.

NEGRO HOUSING—Large building firms and large investment capital may get together in post-war to provide low cost rental housing for negroes. In some places in the South negroes are paying $4.00 a week for a house that cost about $800. In these same areas a comfortable new, modern house could be sold for about $1800, and on that basis a rental project would produce good income as well as greatly improve the plight of these members of the "ill-housed one-third." One firm is reputed willing to build 1200 such units a year.

RURAL INCOME HOMES—Another post-war idea being discussed is development of a financing plan similar to Title VI to permit increased production of rural income homes—the type of small home on acreage that was sometimes misguidedly called "subsistence home."

Such projects would be located on the outskirts of cities and would provide a spot where factory workers could grow a lot of their own food. Size of the acreage would depend on the area—anywhere from a half acre to five. These might be called "Victory farms" for returning soldiers and sailors.

"CARPETECT"—Some years ago I wrote an item about the "Architractor"—meaning a contractor who, like the master builders of old, was an architect as well as builder and performed the functions of both. The other day I heard another one: "Carpetect"—a carpenter who designs a structure on a board as he goes along.

RENTS AND LITTLE STEEL—The rents in a great many cities of the country were set by OPA edict 'way back in 1941. In the meantime the general cost of living has gone up at least 20 per cent and there is pretty good evidence that, considering the shortage of janitors and other types of help, ownership costs have gone up *more* than that. Yet rents are still firmly fixed at the original levels. It's the old story—real estate takes it on the chin because it is exposed, vulnerable and easy to sock. It seems as though at least some landlords ought to be entitled to the 15 per cent increase provided labor under the Little Steel formula.

UP IN THE AIR—A quick swing through the hinterlands shows that some builders, dealers, and contractors are doing very well indeed. In fact some gripe about being so busy they haven't time to spit. They are the smart ones who dug up building, sub-contracting, prefabbing, farm specializing jobs.

FLAT ON THE BACK—Others are sitting back hoping the war will be over soon, not fighting for their share or bothering to figure out fill-ins for regular business. Perhaps they'll not be around for the post-war market; certainly a lot of valuable experience on improvising, using substitute materials that may stay, and keeping their workers together is being lost and will be a handicap later.

FOR THE TOOLS OF WAR—Of numerous items being used to fill in, one of the most interesting seen was a tool chest that one dealer is making in quantity. It's a neat case in oak, with drawers sized for machinist tools—polished, felt-lined, lock-equipped. A sweet little job that's selling like hot cakes.

MAKING PROGRESS—The latest definition of NHA being passed around here is: NO HOUSING ANYWHERE.

Flexibility for the Industries of Tomorrow

Out of the hard necessity of war is emerging a new trend in industrial engineering . . . a new understanding of plant design as a potent factor in manufacturing efficiency.

It is a concept that demands exceptional flexibility in design and construction—an inherent characteristic of Stran-Steel building systems. Present wartime assignments are bringing about important developments in the application of Stran-Steel systems to industry's widely varied requirements. When peace returns, Stran-Steel will apply this experience to serving the peacetime needs of progressive industrial designers.

STRAN STEEL

DIVISION OF GREAT LAKES STEEL CORPORATION
1130 PENOBSCOT BUILDING, DETROIT, MICHIGAN

UNIT OF NATIONAL STEEL CORPORATION

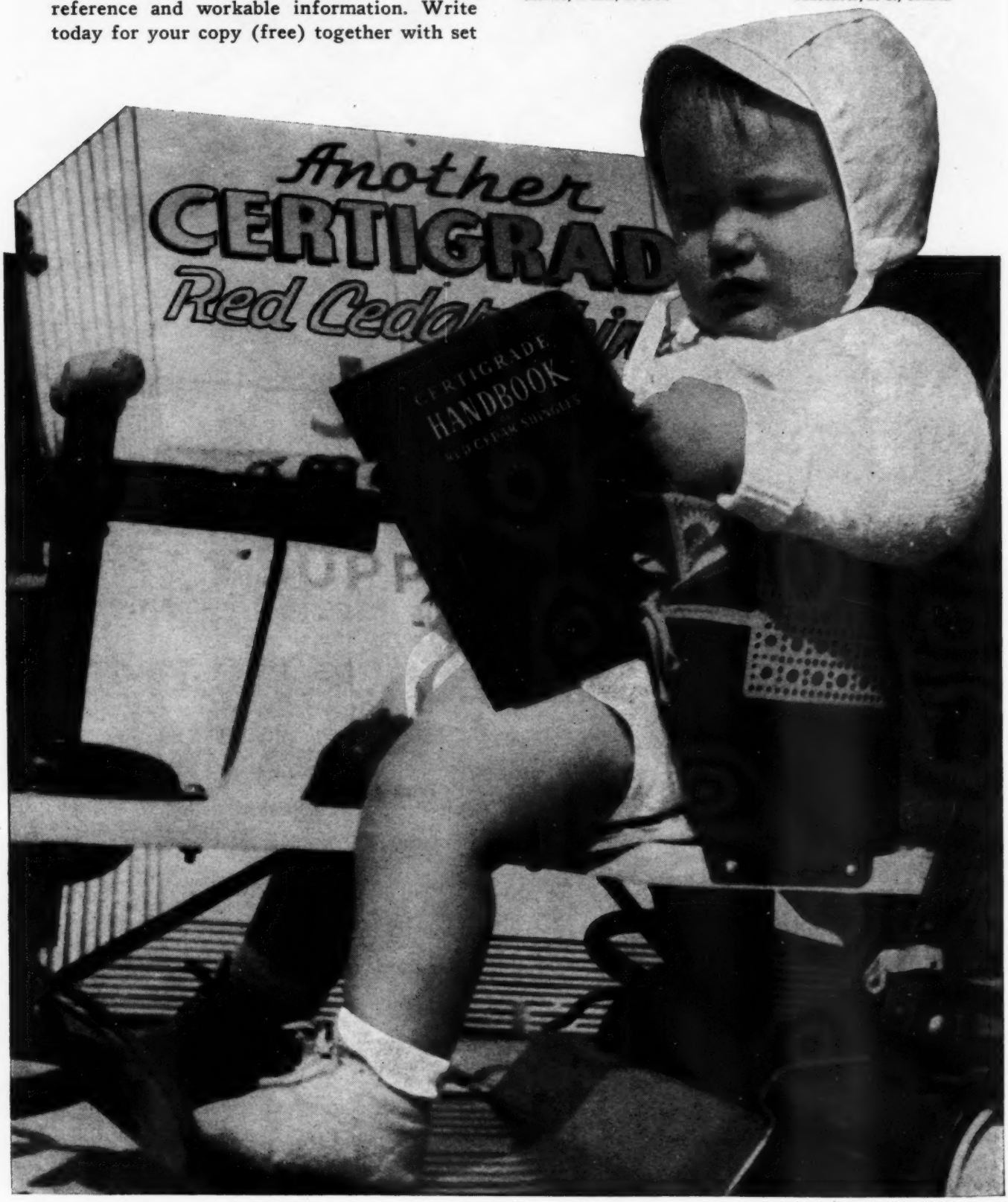
Simple as A. B. C. . . .

YES, INDEED, the Certigrade Handbook edited by experts, makes the application and uses of Red Cedar Shingles as simple as A, B, C. 100 pages illustrated and indexed for rapid reference and workable information. Write today for your copy (free) together with set of Bureau blueprints for correct application of various types of roofs and sidewalls.

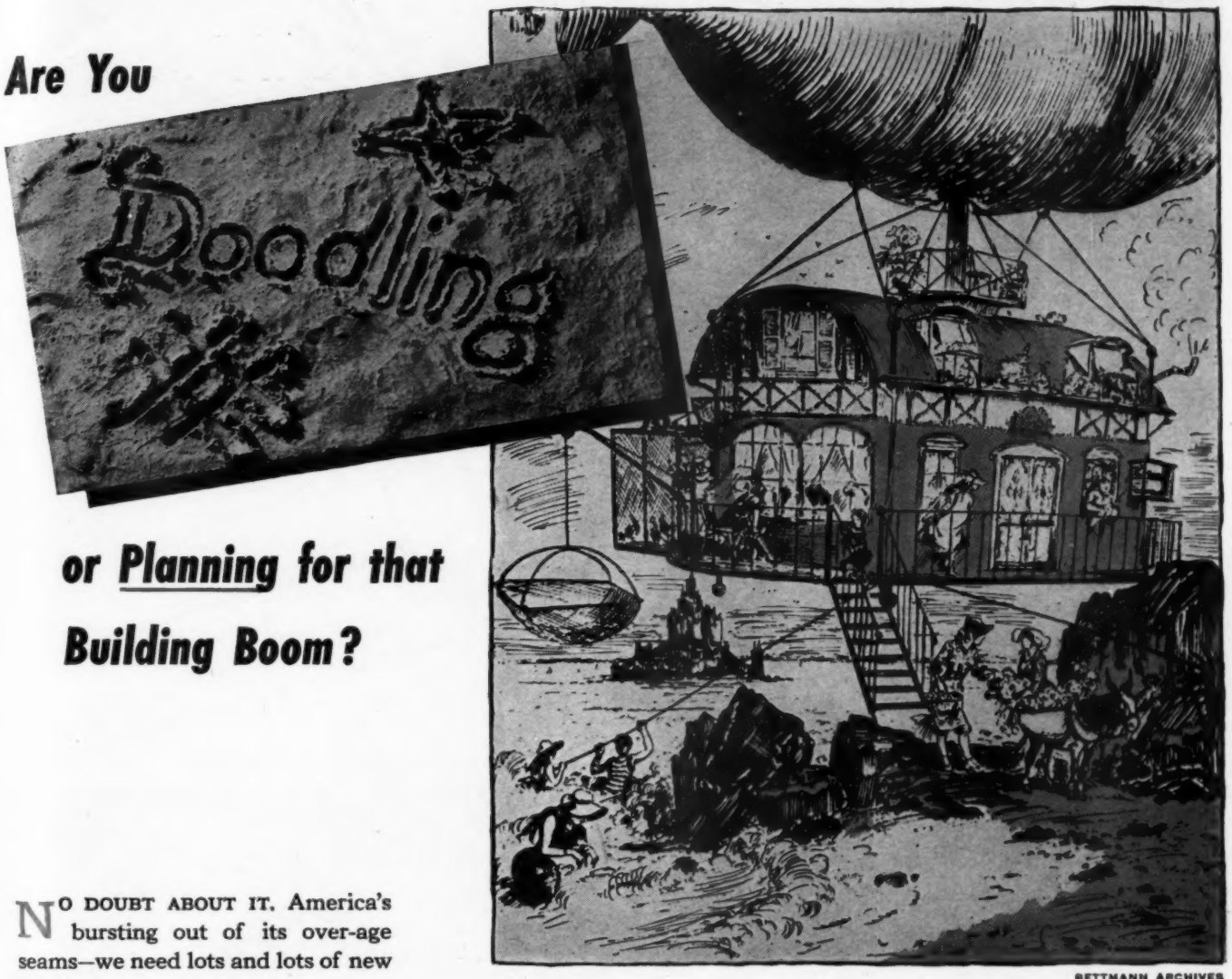
Address Dept. B.

RED CEDAR SHINGLE BUREAU

Seattle, Wash., U. S. A. Vancouver, B. C., Canada



DOODLED IN 1889. *This heavenly-haven-for-wandering-week-enders wowed 'em when it appeared in a Parisian magazine 54 years ago. Fortunately, nobody ever risked his money and his neck trying to build one. Even in the old days, as you see, people dreamed and planned new kinds of buildings—most of which never got built.*



BETTMANN ARCHIVES

Are You or Planning for that Building Boom?

NO DOUBT ABOUT IT. America's bursting out of its over-age seams—we need lots and lots of new housing.

But you're building your hopes on the sands of wishful-thinking if you expect a building boom to follow the war just because America *needs* one!

Remember—there's no law that says "need equals demand." Remember—there was a great need for new housing *before* the war. And *what* happened? No boom.

So, to help *create* demand as quickly as possible after Victory comes, TIME offers the following practical five-point plan:

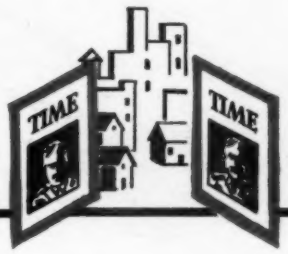
PLAN FOR BUILDING POSTWAR BUILDING MARKETS

First big point is... **(1) Prepare to stimulate confidence in new techniques, materials, designs.** To do this job, tell your story to America's leaders – the people* who, once they *know* about building's new techniques and materials, can break the log-jam of public apathy and release a flood of acceptance. And the best way to reach these leaders is through TIME. For they say they prefer TIME by a wide margin of 7 to 1 over any other magazine they read that carries advertising.

And TIME can help you on all the other four points of this plan as well: **(2) Prime the building market that will start buying first after the war; (3) Interest both men and women who jointly decide when and how to build a house; (4) Stir up prospects for non-residential building; (5) Get the middlemen on your side.**

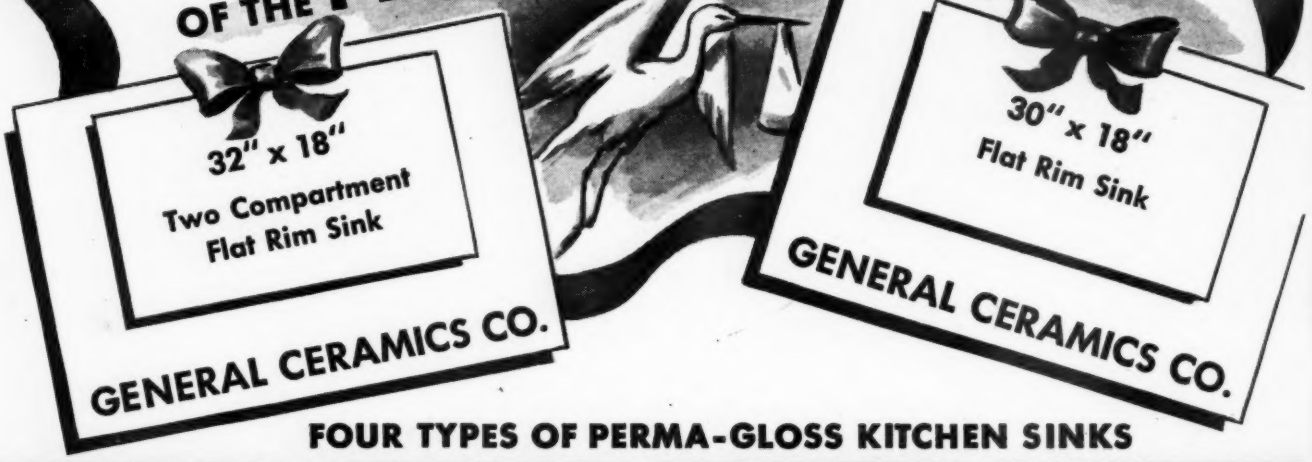
*These people include executives and editors, congressmen and college presidents, government officials, mayors, radio commentators and 21 other groups of leaders—all of whom recently voted "TIME is America's most important magazine."

TIME

THE GATEWAY 

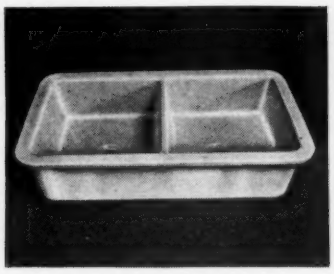
TO THE BUILDING MARKET

Here are the NEWEST MEMBERS OF THE PERMA-GLOSS FAMILY

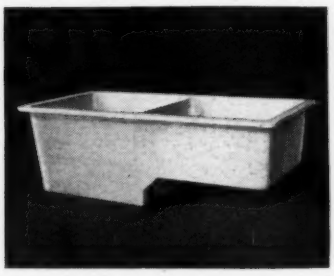


FOUR TYPES OF PERMA-GLOSS KITCHEN SINKS

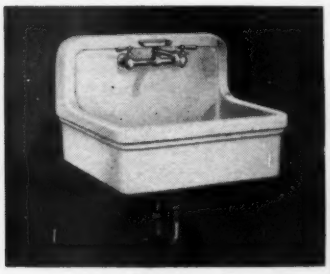
B-551—"Perma-Gloss"
Flat Rim Sinks — 3 sizes
20"x18", 24"x18", 30"x18"



B-534—"Perma-Gloss"
Two Compartment Flat Rim Sink
Size 32"x18"



B-571—"Perma-Gloss"
Flat Rim Sink & Tray Combination
Size 42"x20"



B-520—"Perma-Gloss"
High Back Sink
Size 24"x20"

These latest additions to the Perma-Gloss line of Kitchen Sinks and Trays fill a long-felt need. Born in war time, they are not "War-babies" in the usual sense of the term, as they are designed for permanent homes. Mounted in kitchen cabinets, they will grace the most streamlined post-war kitchen.

Perma-Gloss Sanitary Ware, is made from carefully selected clays . . . fired at a high temperature with a layer of vitreous china glaze. It is an homogeneous, durable body of uniform strength covered with a brilliant, lustrous surface that is acid and stain *proof*—not merely acid resistant. There's no paint or glaze to peel off — no iron to rust. Uniform wall thickness throughout assures a craze and dunt proof product with a body that will withstand thermal shocks.

Write now for full details.

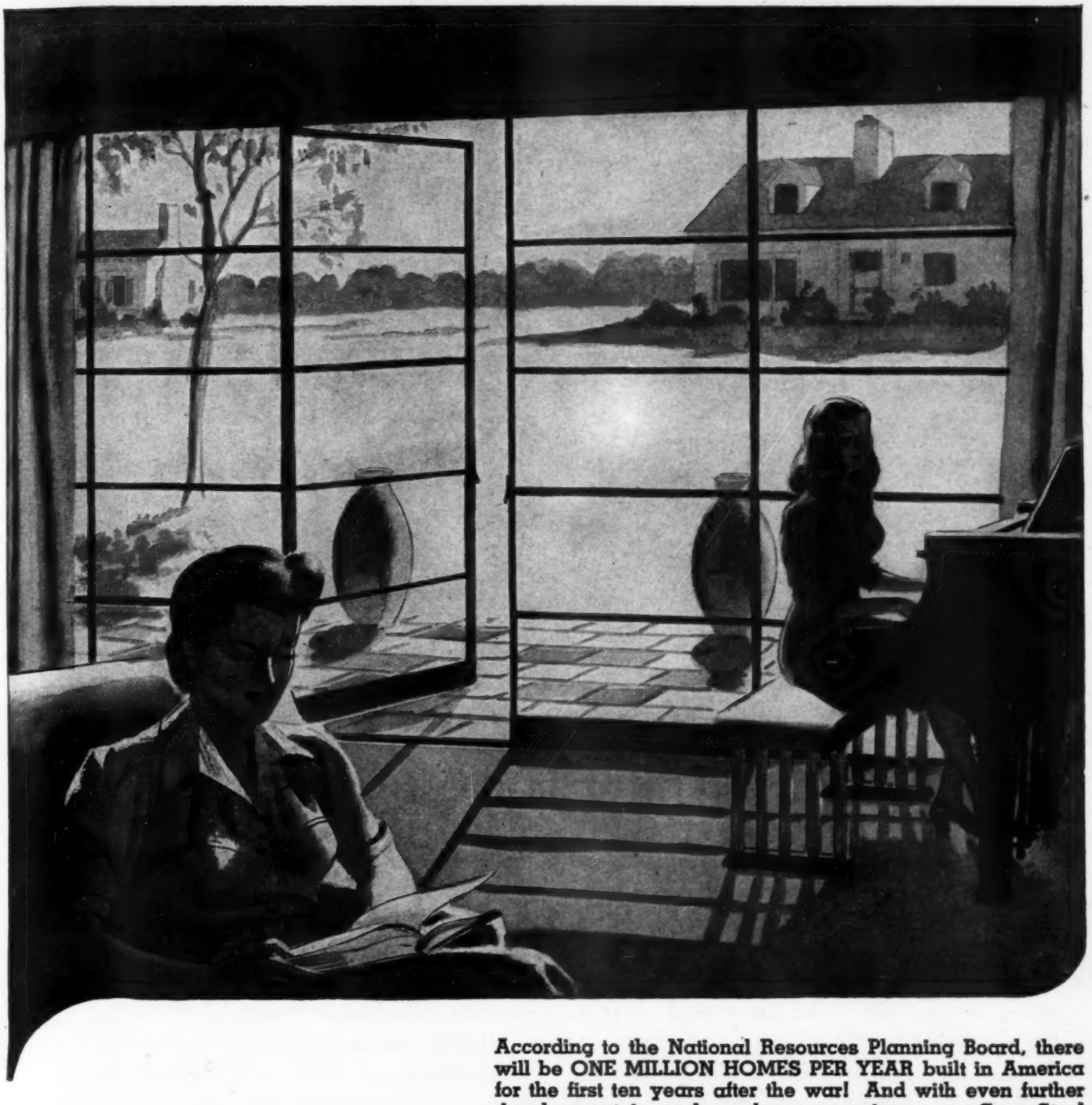
General Ceramics Co.

GENERAL CERAMICS COMPANY • SANITARY WARE •

SANITARY WARE DIVISION
METUCHEN, NEW JERSEY

4867

Sunshine and fresh air for tomorrow's better living



Imagine Ten Million Beautiful Homes

According to the National Resources Planning Board, there will be ONE MILLION HOMES PER YEAR built in America for the first ten years after the war! And with even further development in such modern conveniences as Ceco Steel Casement Windows, you can bank on those homes being beautiful, more livable. There will be an abundance of healthful, cheerful fresh air and sunshine provided by these easier-to-operate windows. War production now prevents your buying Ceco Windows for normal construction. But when you return to peacetime building, you will find this improved product there to help you raise even higher the standards of comfort in the homes you build!

Other Ceco Peacetime Products:
Commercial, Industrial, Casement & Basement Windows
Metal Lath & Accessories.....Welded Fabric
Steel Joists & Roof Deck.....Column Clamps
Metal Frame Screens.....Meyer Steelforms
Adjustable Shores.....Concrete Reinforcing bars

Ceco STEEL Windows

CECO STEEL PRODUCTS CORPORATION, MFG. DIVISION, 5701 W. 26TH ST., CHICAGO

DAYLIGHT ENGINEERING *in the Kitchen of Tomorrow*

Many remarkable new conveniences will take their place in the kitchens of tomorrow's homes. While homeowners may have to wait for several years after the war to obtain most of these conveniences, there is one that they can enjoy just as soon as postwar building begins. That is the convenience of Daylight Engineering.

Through use of large window areas and translucent decorative glass walls, even the most compact kitchen can be given an atmosphere of spaciousness . . . a light, cheerful place in which to work.

The transparent and translucent qualities of glass will also play an important part in the design of other kitchen appointments; its range, refrigerator, cabinets, etc. The sanitary, acid-resisting surfaces of glass will make possible entirely new and different work surfaces. Vitrolite walls or wainscoting will find increased acceptance and use because of its easy-to-clean, easy-to-look-at finish.

Libbey·Owens·Ford Glass for windows, mirrors, wainscoting and work surfaces, and Blue Ridge Glass for partitions, are available in a wide variety of types and colors. Be sure your records of L · O · F Glass are complete.

Libbey · Owens · Ford Glass Company, 25-83 Nicholas Building, Toledo 3, Ohio.

L O F

LIBBEY·OWENS·FORD

QUALITY *Flat Glass* PRODUCTS

Saran Tubing CONQUERS CORROSION

Handling acid water conditions with chemically resistant piping is the practical answer to the corrosion problem. Now, with saran tubing, difficult situations in hard or "aggressive" water areas are being solved.

Saran's resistance to abrasion and corrosion is outstanding. Wide range chemical resistance tests—conducted over a three-month exposure period, show that saran tubing takes many normally difficult materials in its stride. Gasoline, lubricating oils, solvents, many acids—and, of course, water and air—all are transported by saran tubing with little or no effect on the tubing itself.

Durable and easily installed, this new thermoplastic tubing offers distinct advantages in many types of applications—from domestic plumbing to industrial piping. Saran tubing is manufactured under Dow license by skilled fabricators. It is available in sizes ranging from 1/8" to 3/4" O.D., with carefully designed saran fittings to match all tubing sizes.

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York • St. Louis • Chicago • Houston • San Francisco
Seattle • Los Angeles

SARAN

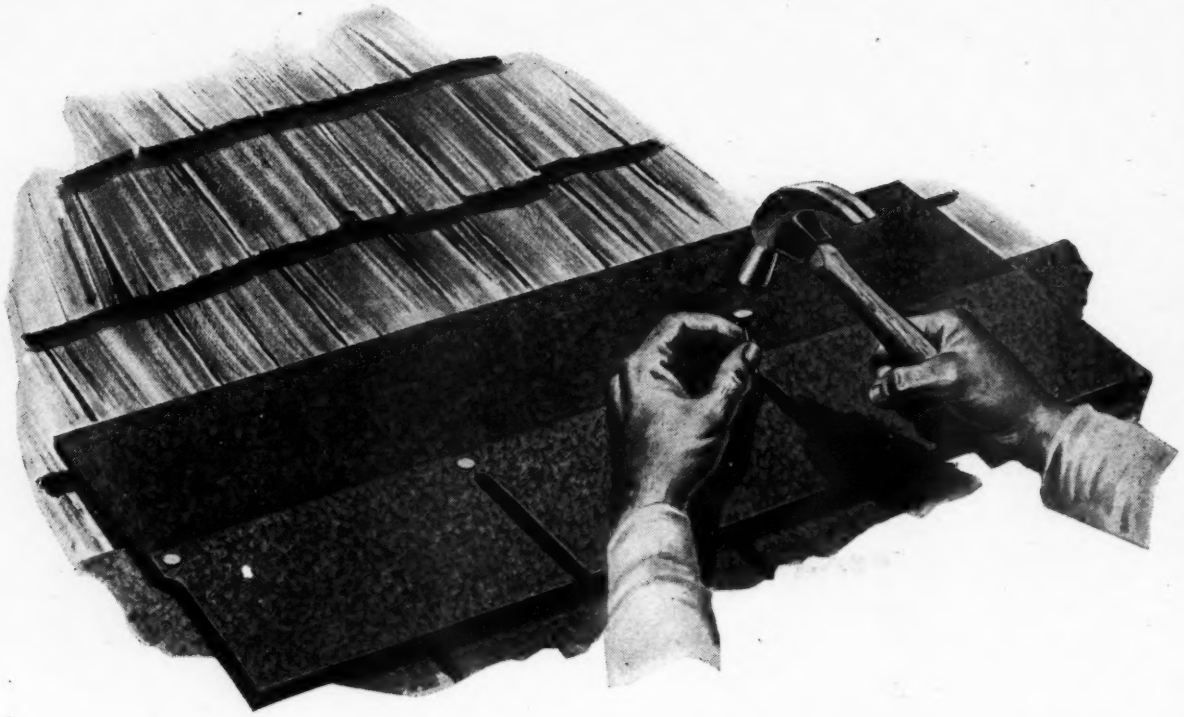
DOW PLASTICS

STYRON • ETHOCEL

DOW

CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY

MORE THAN 2 MILLION HOMES NEED *RE-ROOFING* EACH YEAR!



...that means business for you—because many are right in your community!

More than *two million* is a lot of houses. Of course they are scattered all over the United States... but *right in your own working area* there are homes right now that need *re-roofing*. It's a basic, profitable market in its own right!

Texaco *Thick Butt, Hexagon, Dutch Lap* and *Sta-Fast* offer you four popular types of shingles and a wide price range. In addition—Texaco's unequalled network of nearby warehouses permits you to operate with a minimum inventory ...on a lower investment... maintaining fresh stocks... enjoying faster turnover.

And—when you sell Texaco you sell *a name that millions know* and trust. When you sell Texaco you offer a roofing product for every essential roofing need. And when you sell Texaco you sell *asphalt* roofing—the most popular type of roofing in America. Actually *more than twice as much asphalt roofing is sold each year as all other types combined.*

* * *

Texaco Asphalt Shingles and Roofing are available through Texaco Roofing Dealers supplied by a large network of Texaco warehouses—east of the Rockies. Drop in, write or 'phone your nearest Texaco Roofing Dealer, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

TEXACO

TEXACO Asphalt SHINGLES and ROOFING

MAKE THIS TEST — Prove BRIXMENT is BEST!

1 Butter one brick with Brixment mortar, colored with any good black mortar color. Then butter another brick with mortar made with 50-50 lime and cement, and the *same* mortar color.

2 Set both brick aside for a couple of weeks. You'll find that the sample made with Brixment mortar retains its full, rich color (right), while the other turns dull or pale.

BRIXMENT *Does Not Fade Mortar Colors!*

The permanence of the mortar color in the joint depends not only upon the pigment selected but also upon the mortar materials. Too frequently a good job of brickwork is spoiled by the use of a mortar that fades the color or that leaves a white scum of efflorescence on the mortar joint.

Brixment helps prevent this condition. For Brixment is practically free from the aggressive chemical compounds or soluble salts so frequently the cause of fading and of efflorescence.

The waterproofing material combined with Brixment during manufacture is a further protection to the color because it helps prevent moisture from penetrating the mortar joint and leaching out the pigments.

Brixment is therefore recommended by manufacturers of both mortar colors and face brick, for use with their products.

BRIXMENT

For Mortar and Stucco

Louisville Cement Company, Incorporated, Louisville, Kentucky. Cement Manufacturers for Over a Century.

OH BOY! SEE WHAT I SEE!

An easier, faster way to do a good job

Learn about the Dexter Bit-Guide — the tool that gives streamlined, factory production method to Dexter-Tubular installation. Simply clamp the Bit-Guide on the door — self-centering, no measuring — guides the boring straight and true. Ask your dealer for a demonstration and complete details.

Dexter Tubulars save time and expense in installation — get vitally needed war building jobs done easier, faster — on time, to highest quality standards. They conform to WPB specifications. They are backed with a Lifetime Warranty. They are available in desired quantity for ***prompt delivery*** on Priorities.

Equally popular and equally backed for quality and performance is the Cabinet Hardware Line — available today in conformity with Government regulations. Write for details — let us send you complete information on Cabinet Hardware and Dexter-Tubular Locks and Latches that conform with Federal regulations. Write today — no obligation.

It's a wise old bird* who knows and uses what's best for every job — It's a wise and well satisfied builder who uses ***Dexter Tubulars.***

**This is the DEXTER Drill-Hole Woodpecker, in case you're not up on your zoology.*

DEXTER TUBULAR LOCKS and LATCHES

Manufactured by **NATIONAL BRASS COMPANY**
GRAND RAPIDS, MICHIGAN

Washington News Summary

Ease Housing Restrictions Can Sell Third of Units

Latest steps to encourage privately financed war housing was the liberalization of regulations to permit a builder to sell up to one-third of the total dwelling units in all projects which he has built in any one war housing area under priorities applied for on or after February 10, 1943.

The remaining units which must be held for rental may, however, be sold to eligible war worker occupants after two months rental occupancy instead of the four months occupancy required before. The tenant has the option of whether or not he will purchase the unit.

Furthermore, if additional and unforeseen costs are incurred during construction, over which the builder has no control, modifications of regulations have been made to allow a reconsideration of the established rental schedules. Also a reasonable charge can be made for garage space and an additional charge, covering the actual cost on a pro-rata basis of tenant's gas and electricity. Charges for gas and electricity in new privately financed war housing projects can be added on the basis of not more than $3 per room per month maximum for tenant's services. This provision does not affect the rental charges of war housing projects already authorized.

"Because of the serious shortages of critical materials required for direct war production the NHA can authorize war housing only to accommodate essential incoming war workers which naturally requires a much higher

(Continued to page 78)

Procedure for Clarifying Industrial Project Plans Speeds WPB Processing

Inquiries for permission to construct industrial facilities have multiplied within the last few weeks, the Construction Advisory Service of the WPB Facilities Bureau reported recently. Due to the general curtailment in facilities construction, companies desiring new facilities have been seeking information as to what considerations now govern the granting of authority to begin construction and obtain appropriate priorities.

The Construction Advisory Service is an expansion of services previously available to advise manufacturers and builders on the basis of preliminary drawings and approximate listings of building materials before they submit formal applications to begin construction.

Applicants, their architects, engineers, and other employees may avail themselves of these services before preparation of final drawings and specifications.

Through this procedure applicants familiarize themselves with currently permissible types of construction and materials, and avoid unnecessary delays resulting from redesigning projects and from the submission of incompletely prepared applications.

These services accelerate construction and operation of essential projects. Inquiries regarding them should be addressed to Howard W. Cutler, Chief, Construction Advisory Services, Project Division, Facilities Bureau, War Production Board, Washington, D. C.

This procedure does not apply to projects directly undertaken by the Army, Navy, and Maritime Commission.

OPA Issues Two New Pamphlets on Rent Control

The Office of Price Administration today announced the publication, in pamphlet form for limited distribution, of two new series of official rent control interpretations, one applicable to the rent regulation for housing, the other to the rent regulation for hotels and rooming houses.

Application of Insulation Declared Essential Work; OWI Campaign Intensified

Probability of unavoidable fuel shortages next winter has led the War Manpower Commission to declare the application of mineral wool for home insulation an "Essential Activity." Announcement of the decision, made in the interest of fuel conservation, is contained in a letter from the Executive Director's office to Wharton Clay, Secretary of the National Mineral Wool Association. The letter states:

"The War Manpower Commission's Committee on Essential Activities has interpreted the installation of mineral wool to be encompassed within building-maintenance and repair services which is included with Group 31, Repair Services, of the List and Index of Essential Activities. Copies of the List and Index have been forwarded to all United States Employment Service offices and to all War Manpower Commission area, state and regional offices for use in connection with placement and stabilization policies and programs."

Further evidence of the importance the Government attaches to home insulation is the restoration to applicators and producers of the 40% gasoline cut in the Eastern states. Under Category A-2, as listed in Office of Defense Transportation release No. 298, are included "Thermal Installations Used for Fuel Conservation and The Insulation Industry." The ruling makes it possible for applicators to secure the gasoline necessary to fully

(Continued to page 78)

CED Starts Post-War Study at Albert Lea

A post-war clinical study at Albert Lea, Minn., initiated at the instance of the Committee on Economic Policy of the National Chamber, is in the nature of a laboratory experiment in post-war planning at the community level.

The expectation is that the results will be such as to encourage many other cities to make the same sort of an intensive study of probable post-war conditions.

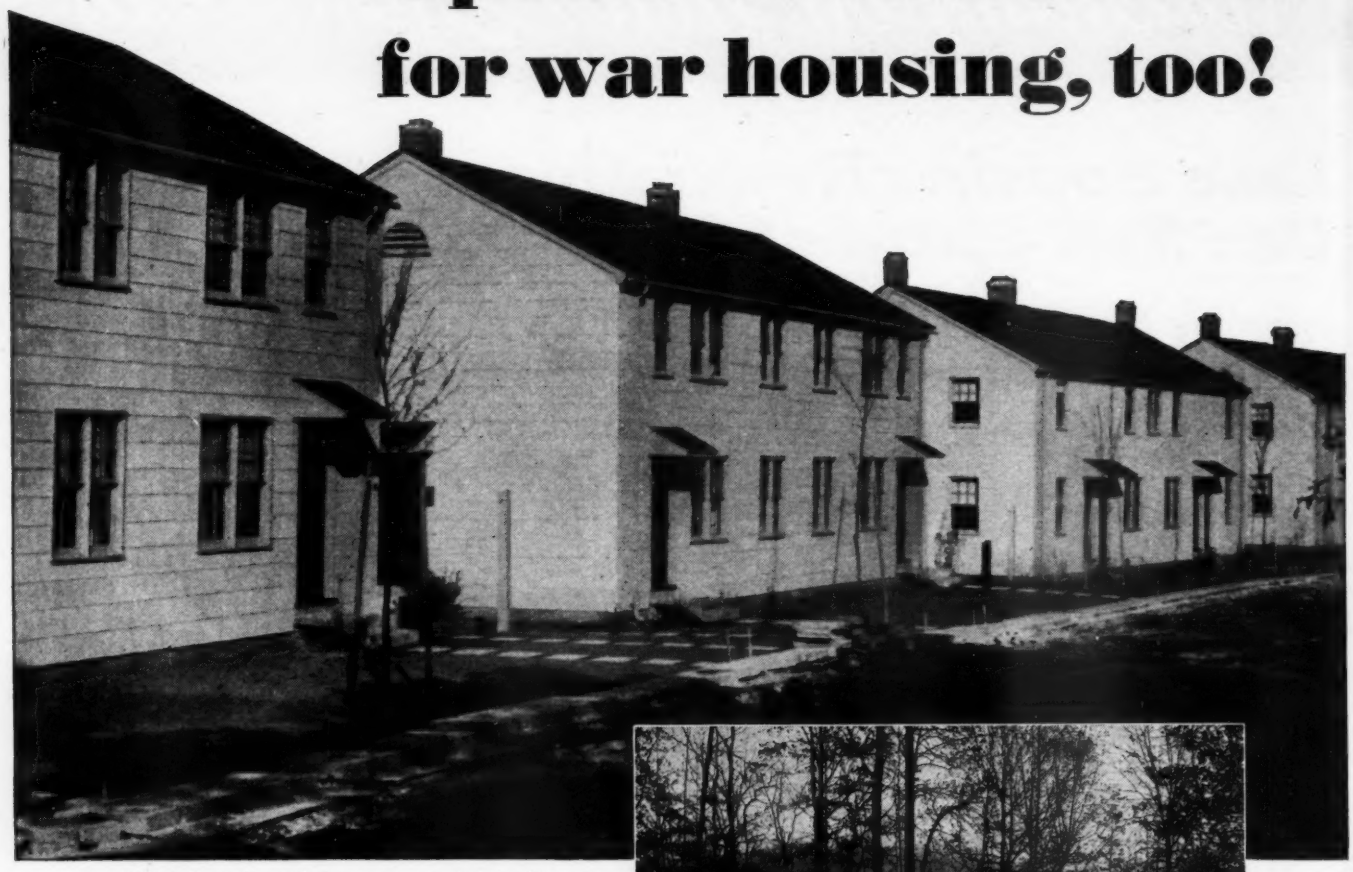
More than 300 local chambers of commerce have formed post-war planning committees at the suggestion of the National Chamber and will be supplied with the data developed at Albert Lea.

Leadership in the Albert Lea study was provided by J. Cameron Thomson, president of the Northwest Bancorporation, Minneapolis, who is vice-chairman of the National Chamber's Committee on Economic Policy.

Heads of industrial firms, retailers, bankers, city and county officials and civic and farm leaders took part.

The Purpose is, first to catalogue the number of potential workers for the post-war period; second, to ascertain the number of jobs likely to be available in private industry, trade and agriculture and on public projects; and third, to canvass possible methods of balancing the number of workers and the number of jobs.

Speed when needed for war housing, too!



Lehigh Early Strength Cement saved time in this rush-order housing project at Newport, R. I. Blocks were cured in 1/3 to 1/5 normal time, permitting quick handling and use.

These so-called "bubble houses" at Falls Church, Va., were needed in a hurry. Concrete made with Lehigh Early Strength Cement was shot on inflated balloons with a cement gun. Curing time was saved. Balloons were deflated and re-used in a few hours.

Housing for war workers is another phase of the war construction program in which concrete made with Lehigh Cements played an important part. The variety of purposes for which they were used, are reflected in many different types of essential housing structures.

In cases where quicker service strength in the concrete meant speedier occupation, Lehigh Early Strength Cement answered every demand. Examples illustrated on this page, show the adaptability of Lehigh Early Strength Cement as an aid to rapid construction. It comes to service strength 3 to 5 times faster than normal portland cements, providing a finer, denser concrete.

Lehigh Early Strength Cement has been used to speed-up concrete construction in every type of war work, including oil fields, shipyards, aviation, and armament plants. Its advantages apply to every sort of private and peace-time construction. Let Lehigh's Service Department help solve your special problems.

LEHIGH EARLY STRENGTH CEMENT
FOR **SERVICE-STRENGTH** CONCRETE IN A **HURRY**

Lehigh CEMENT

LEHIGH PORTLAND CEMENT COMPANY • ALLENTOWN, PA. • CHICAGO, ILL. • SPOKANE, WASH.

AMERICAN BUILDER *Editorial*

FHA plan for farm building needed

WHAT FHA did for home financing should now be done for farm building and improvements.

Farm homes and farm buildings of the nation are in a disgracefully run-down and ramshackle state largely because of the lack of a satisfactory financing system for such building work.

American Builder does not propose that the present Federal Housing Administration should necessarily get into this type of financing, but certainly some steps should be taken by some nation-wide agency to provide farmers with a more effective, workable method of spreading the cost of major construction operations over a period of years.

Needed now, and for post-war

At the present time the farmers of the nation are being called on to increase production. Not only are their products in demand now, but they will continue to be in demand *for many years to come* to supply food to the far corners of the earth. They are entering an exceedingly prosperous period—perhaps the best in their history. But even so they will be unable to finance major construction expenditures out of current income.

It is true that the Farm Security Administration, the Farm Loan Banks and other institutions will make farm loans, but these are usually bound up with a first mortgage on the entire property or with other restrictions that make them unsatisfactory to the farmer who wants to build, say, an $800 new structure.

One of the greatest building markets in the world would be opened up if the farmer could finance such an $800 structure on a long-term amortized loan of the FHA type. The amount would be based on the farmer's cash income; payment would be scheduled on a quarterly, semi-annual or annual basis, depending on crop returns. If such a system of farm finance were backed by a national mortgage insurance system such as FHA, the risks would be distributed. Thus excessive financing charges for short-term loans and for construction money would be eliminated and the financing of farm construction would be put on the same simple, workable basis that home building now is.

American Builder believes this is a matter that warrants attention now as a war step, and that it will prove still more valuable in the post-war period when a vast program of farm construction would do much to create employment and maintain earning power.

Farmers should farm, builders build

The farm building market will undoubtedly be one of the big sources of building jobs in the nation for many years to come. There is no question but that restrictions on farm construction and farm materials will be the first to be lifted—possibly before war's end—because production of food will be one of the most pressing problems of the post-war era.

Thus smart builders having trouble getting other types of work are turning to farm building, not only as a source of present business but as a lucrative post-war opportunity. Smart farmers, likewise, are learning that they can make more money farming than they can building. In other words, both farmers and builders are learning that *farmers should farm and builders build.* An experienced contractor can perform a farm construction job with speed, efficiency and quality that no farmer can possibly attain. The contractor comes in, does the job quickly and well, gets his money and gets out.

Took farmers 4½ years for average job

On the other hand, experience has shown that the farmer who undertakes to do construction work himself lets it drag over a long period, and it actually costs him far more that way.

As James Strahan tells in another article in this issue, the Farm Security Administration found this out. On 1200 construction loans of $1000 each made to farmers in northeastern states, the average farmer *took 4½ years to finish the job.* In a large number of cases the work never was completed. When the FSA arranged to have experienced contractors come in and do the work at a stated contract price, however, the jobs were done speedily and well, and cost the farmer less.

Lack of skilled farm building contractors is definitely holding back farm construction. As a patriotic duty, as well as an opportunity for a satisfactory livelihood, builders and contractors should certainly go after this type of work.

EXPERIENCED builders are needed for a vital service on the home front—building to increase food production. They can do such work better, quicker, cheaper than farmers.

How to Make Yourself a Farm Building Expert

1. ***Contact nearest farm bureau agent or county agricultural agent for information on types of building most needed in your area.***
2. ***Write your State Agricultural College or University Agricultural Extension Division for farm building plans and data recommended for your area.***
3. ***Obtain farm building plans and data on non-critical materials from building material manufacturers. (See list of plan books, pages 72-73.)***
4. ***Contact farmers, farm organizations and farm supply firms for leads on jobs.***
5. ***Arrange for a meeting of builders and dealers in your community at which county agent or agricultural extension service engineers will advise on local farm building needs and methods.***

WANTED—Thousand

Farm construction jobs crying for attention, with farmers too busy to do own building work.

Here are suggestions on how to get farm jobs NOW and develop a profitable business in the years ahead.

By James L. Strahan

Agricultural Engineer, the Flintkote Co.

OPPORTUNITY exists now as never before in the history of American agriculture for rural builders, contractors and lumber dealers to take a vital part in agricultural production; to develop a professional point of view toward farm building design and construction; and to become the group to which farmers will naturally turn for advice and service whenever they have building problems to solve.

Thousands of farm building jobs need doing in a hurry, and experienced builders are in great demand to do them.

To take advantage of this opportunity, the logical, sensible thing to do is to become familiar with the latest and best ideas on farm buildings. Often this can be done by talking with farmers concerning their construction problems. Frequently the farmer's ideas on design and arrangement, plus the builder's ideas on construction details and the proper use of materials, will produce the right answer.

But the principal source of sound information can be reached most quickly, and sometimes *only* through the Farm Bureau Agent or the County Agricultural Agent. He is in a position to bring the technical recommendations of the State Agricultural Extension and Experiment Station specialists directly to any individual or group who needs the information.

Through him one can learn to know whether poultry housing or dairy housing or food storage problems are of particular importance to the farmers of the neighborhood or county. Certainly builders in Aroostook County, Maine, should know just about all there is to know about storing potatoes. Not just how to put in a foundation and build a superstructure on it, but also the importance of controlled ventilation in preserving the crop in storage, and the importance of insulation, how much of it to use and where to put it to prevent depreciation through excessive condensation. He should be an expert on potato storage.

Likewise builders throughout Minnesota and Wisconsin should certainly be well informed on all phases of dairy housing. They should keep up to date on health regulations, should know how to handle problems of milk house and creamery design, how to erect silos, how to design stables so that they will be warm and dry throughout the cold winter season which prevails in those areas. They

# of FARM BUILDERS

should be competent to advise on stable equipment for different conditions; in short, they should be the "country doctor" on all matters pertaining to housing and facilities for the dairy industry.

Builders in New Jersey, Maryland and Delaware would be missing a good bet if they failed to learn all about housing farm poultry, how to design and build brooders, range shelters, self-feeders, watering devices and the hundred and one labor saving utilities required by the poultry farmer, to say nothing of laying houses, brooder houses, hatcheries and other similar major poultry structures.

The County Agricultural Agent is the local representative of the State Agricultural Extension Service. This agency is supported by public funds and is set up to bring to the citizens of the state information on any of the technical branches of agriculture and home economics for which there is a definite demand. Extension specialists will visit different communities where a request for their services is made through the County Agent, and hold lectures or schools sometimes extending over several days on subjects of timely interest. Sometimes larger schools involving longer courses are held at the headquarters of the service, usually at the State College or University, to which all who wish may come for instruction.

This has been done for special industry interests in the past, notably for feed dealers who were interested in the

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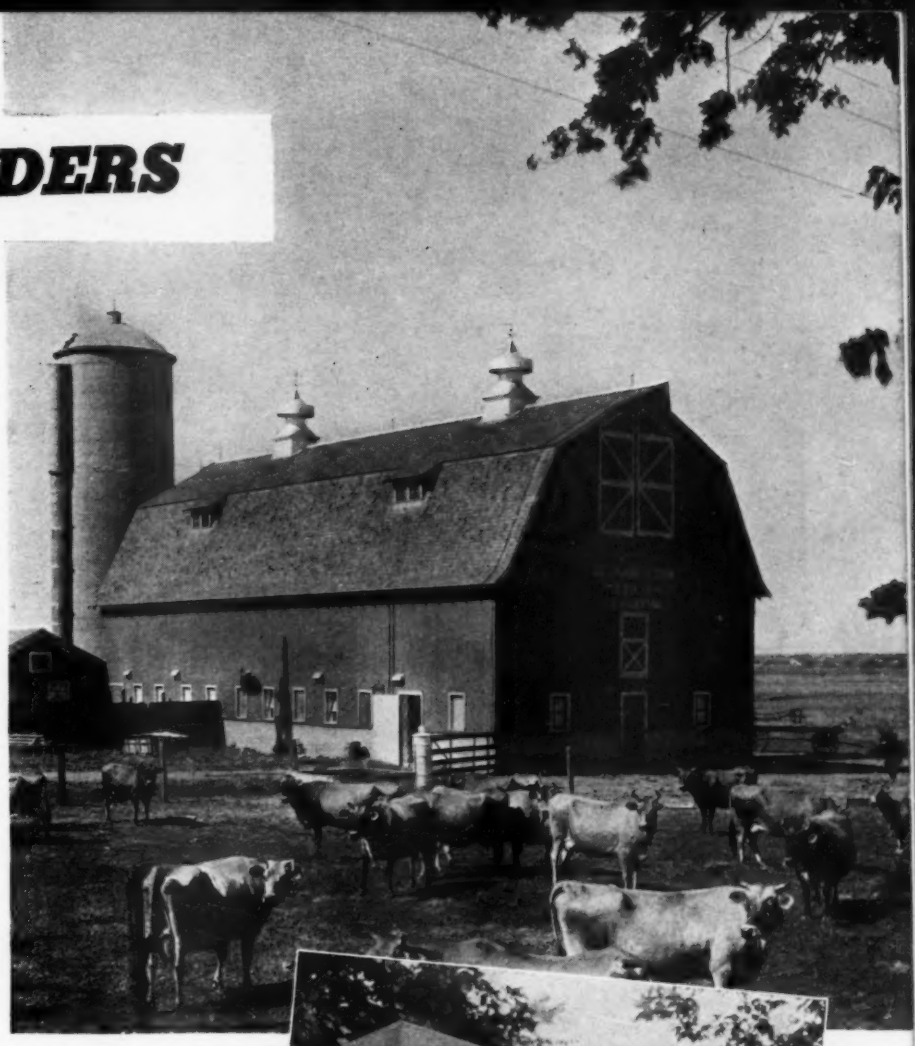
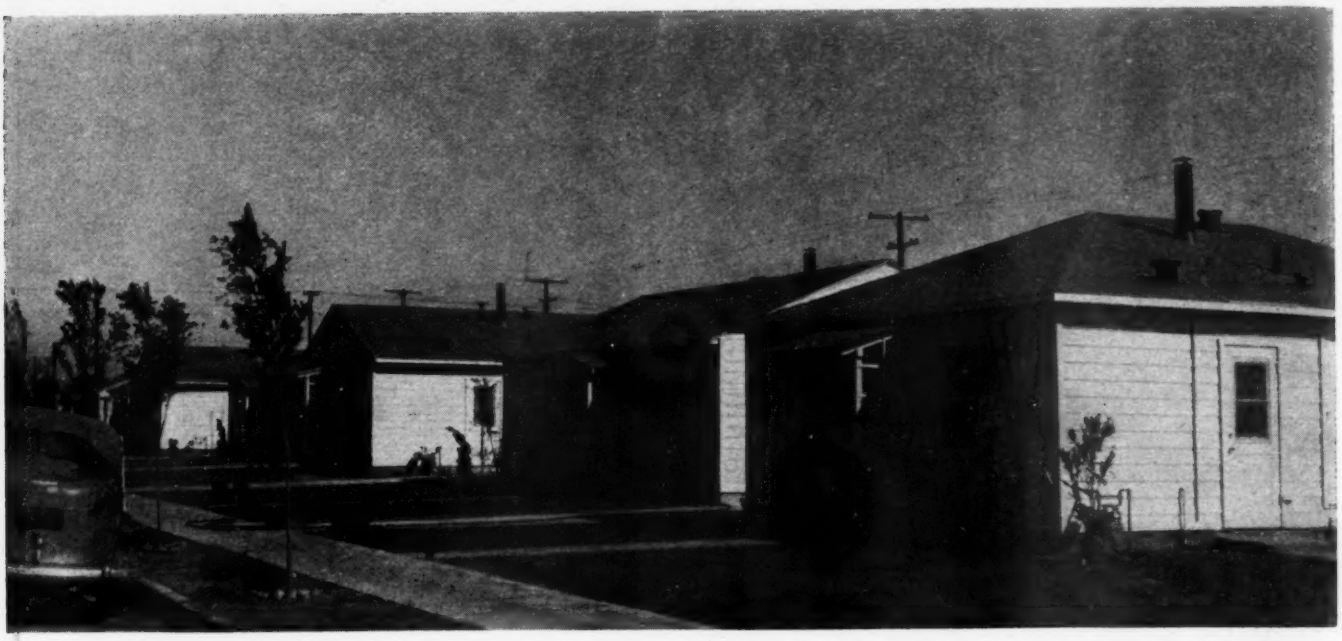


FARM construction and repairs will be a lucrative source of business for builders for many years after the war. The farmer is entering one of the most prosperous periods in history.

See Special Farm Building Section Pages 42-55

FARMERS should farm and builders should build. Lack of experienced builders to do needed farm jobs is holding back food production. Farmers are too busy to do building work and prefer to have it done by an expert builder.



STANDARDIZATION PROVES KEY to more efficient operation. These FHA Title VI houses were built in town of Colton, Calif.

Standardized War Models To Aid Private Builders

A Plan to Help Builders in Small Towns and Keep Out Public Housing

AMERICAN BUILDER *in co-operation with the National Association of Home Builders presents in this issue the first of a series of standard war model houses suitable for building in small towns as well as large cities.*

FRITZ BURNS, president of NAHB, has expressed concern over the fact that in many small towns private war housing quotas have not been taken up. If private builders do not construct needed war housing in such small towns, public agencies will.

GREATER USE OF standardized war models appears to be the answer to this problem. Officials of NAHB are engaged in selecting some of the best and most typical war housing plans from various sections of the country. These will be published in future issues of AMERICAN BUILDER.

THE NATIONAL ASSOCIATION of Home Builders with offices at 1737 K Street, N. W., Washington, D. C., has volunteered to do all in its power to assist builders in small towns to handle needed war housing.

FRITZ B. BURNS, the capable and energetic president of the National Association of Home Builders, recently pointed out that private war housing in many small communities has lagged far behind that being done in larger cities. Priority quotas have frequently been unused and the result is an open invitation for public housing to move in.

To make it easier for private builders in small towns to provide needed housing, he proposed that *American Builder* publish a series of standardized plans for war models. Because he believes that if private enterprise building is to survive the war all groups in it must co-operate, he offered the co-operation and assistance of the National Association of Home Builders in selecting these plans and providing needed data on such housing.

American Builder presents with this article the first of this series of standardized war models—a compact 32 x 22 foot plan that has been successfully built in a considerable number of small communities by a Los Angeles builder.

Future standard models will cover the various regions of the country, fitting needs of builders in these areas. It is hoped to present more complete data, such as the PD-105-A information on critical materials, which was not possible with this first plan. Builders interested in obtaining copies of plans or further data may get in touch with Frank W. Cortright, executive vice-president of NAHB, whose office is at 1737 K Street, N. W., Washington, D. C.

The standardized war model illustrated with this article is the result of research, study and practical use by Home Builders Supply Co. of Los Angeles and architects William Allen and W. George Lutzi, of that city. It has been used in the construction of several hundred houses in small towns within a 100-mile radius of Los Angeles. It is so simple and standardized that all lum-

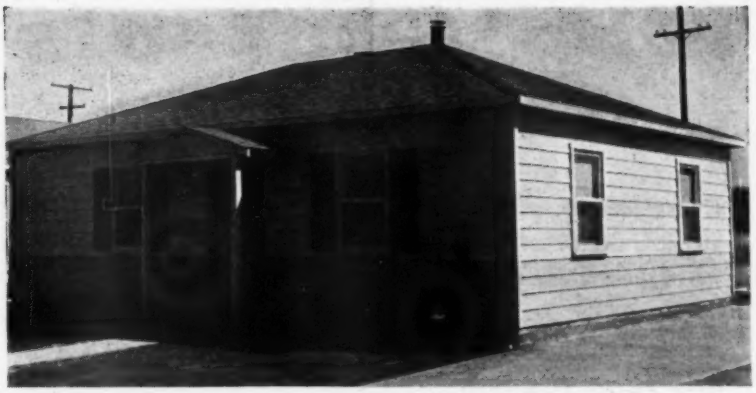
(Continued to page 78)

32′ x 22′ plan used by L. A. builder in 4 small towns

GROVER KING and his associates of the Los Angeles Home Builders Supply Co. have perfected a plan that is so simple, standardized and economical that they are using it in 4 small towns within a radius of 100 miles of the city.

ONLY 377 POUNDS of critical metals are used, which includes 22½ feet of water connection to street. Use of lumber was cut to 3.6 board feet to the square foot of floor area. All lumber was pre-cut in a shop.

SEVERAL hundred war models of this type are under construction and it conforms to latest WPB and FHA requirements for the Los Angeles area. Detailed plan below shows concrete floor with waterproof membrane, ventilated roof overhang, pipe space for economical plumbing.

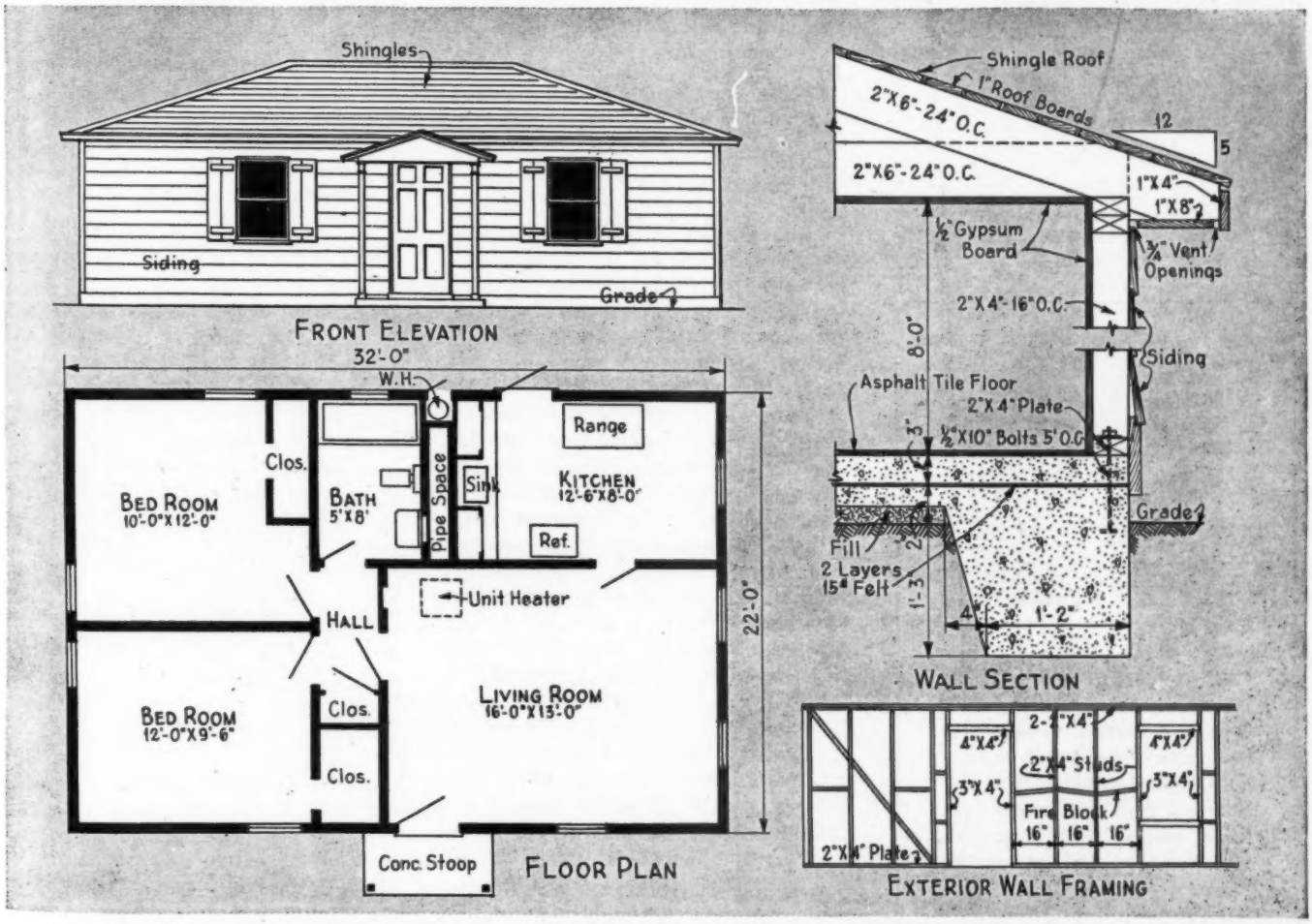


TYPICAL standard Home Builders Supply Co. house as detailed below.

H. D. Churchill built $15,000,000 worth of housing before Pearl Harbor.

Grover King, energetic builder of standard war housing units.

Standardized War Home Model Selected by National Association of Home Builders



DETAILED PLANS SHOW skillful arrangement to use minimum metal and lumber. William Allen and George Lutsi, architects.

Who Controls the PURSE

Conflicting viewpoints on post-war home plans are a serious threat to the future of this industry. Should FHA be liberalized, expanded? Do private builders want more FHA in post-war? In the article below a prominent manufacturer takes a look at FHA's 9-year record and finds it good.

FHA Pays Its Way!

By W. H. UPSON, Jr., Secretary-Treasurer, The Upson Company

ACCORDING to the old newspaper axiom it is not news when dog bites man. But it is news when man bites dog.

Pursuing this same analogy there is nothing newsworthy in the statement that this or that Government Bureau or Department finds itself unable to operate on a business basis. It is understood and accepted that the very activities of many of these bureaus preclude any operating income in the form of money.

So it becomes news—stimulating news—when, without fancy bookkeeping, a Government Bureau can show an actual surplus at the end of the year.

These remarks are inspired by the figures recently made public showing the amazing extent of Federal Housing Administration activities for 1942. To Commissioner Abner H. Ferguson and his predecessors should go the thanks of every thinking taxpayer for the highly efficient manner in which this important Government Bureau is being conducted.

Because FHA provides a useful, far-reaching service to taxpayers, yet does not require a dime of taxpayers' money for operation, it seems to us that every citizen in the land should be apprised of this unusual performance.

Celebrates Ninth Anniversary

In June of this year, the Federal Housing Administration celebrated its ninth anniversary. Started in 1934, a new venture in mortgage financing, the Administration has demonstrated during these years the soundness of the insured mortgage system. It has been a potent force in stimulating home building by facilitating the flow of loans into the construction industry.

More than half of the Federal Housing Administration income during 1942 was paid into its various insurance reserves, **after providing in full for all current operating expenses.** Any business man who is accustomed to examining financial reports, will get a thrill of satisfaction from a perusal of the figures. The income of FHA during the calendar year totaled $27,298,702, which was derived from insurance premiums, appraisal fees, and interest on investments. After payment of operating expenses of $11,863,709, there remained an excess of income over expenses of $15,434,993 to be added to various reserves, which for safety's sake should be upbuilt for the uncertainties of post-war years.

W. H. UPSON, Jr.

"FHA provides a useful far-reaching service—does not require a dime of taxpayers' money—kept thousands of contractors in business—eliminated obnoxious second and third mortgages—gave home owner added value—a powerful factor in encouraging private enterprise."

WHICH????

Shall FHA be expanded, liberalized, given greater power to force lower interest rates and police construction standards? Are builders willing to accept greater control by a government agency in order to obtain more favorable financing terms?

Results for 1942 brought the gross income of FHA since its establishment in 1934 substantially above the total of its operating expenses. Take a look at the figures! They will give you renewed confidence that an impartial and efficiently operated Government activity can be run on a businesslike basis.

Total income from the mortgage insurance program under FHA under Titles II and VI from 1934 through 1942 was $98,755,052 while operating expenses of these Titles were $85,551,274. This left an excess of income over expenses of $13,203,778. The average business man would figure this excess as a profit of about 13% on sales.

These figures are even more reassuring when consideration is given to the fact that they apply from the beginning of the business and

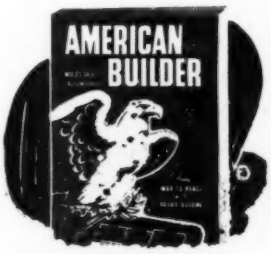
(Continued to page 60)

STRINGS, Controls Building

American Builder continues its "War to Peace" program for private enterprise with this presentation of two sharply different points of view on home financing. In the article below a spokesman for the U. S. Savings and Loan League sees potential dangers in U. S. control of home financing, including FHA.

WHICH????

Shall the services of private financing institutions without government supervision be expanded and increased to more adequately serve home building? Will not builders prefer a local firm rather than an FHA set-up run from Washington?



***American Builder's* six months' campaign for a constructive "War to Peace" program for private enterprise will be climaxed by its October issue. Here the objectives and post-war plans of all groups of the industry will be brought together.**

Danger in U. S. Control

By FRANKLIN HARDINGE, Jr.
U. S. Savings and Loan League

THERE is no question but that home construction cannot proceed without adequate financing arrangements being available for the ultimate consumer. Leaders in the savings and loan business, therefore, viewed with interest the eight-point program advanced by *American Builder* to insure a post war construction program.

They have been surprised, however, that five out of the eight points advanced suggest action or changes in financing arrangements, while really only ONE point deals with improvements which the building industry itself should accomplish.

Further, it is surprising that the building industry should seek to rid itself of government control, limitation and competition, while at the same time advocating that such control and competition remain *in the field of financing*. Some fundamental principles are at stake which should be explored.

The building industry has long been recognized as one which is local in character. Until the early 30's construction had been financed essentially by local institutions without any government participation. American business men have got to make up their minds whether they want government *in* business or *out* of business, and they can't straddle the fence by believing that businesses *other* than their own should be regulated by the government, but they themselves should be free.

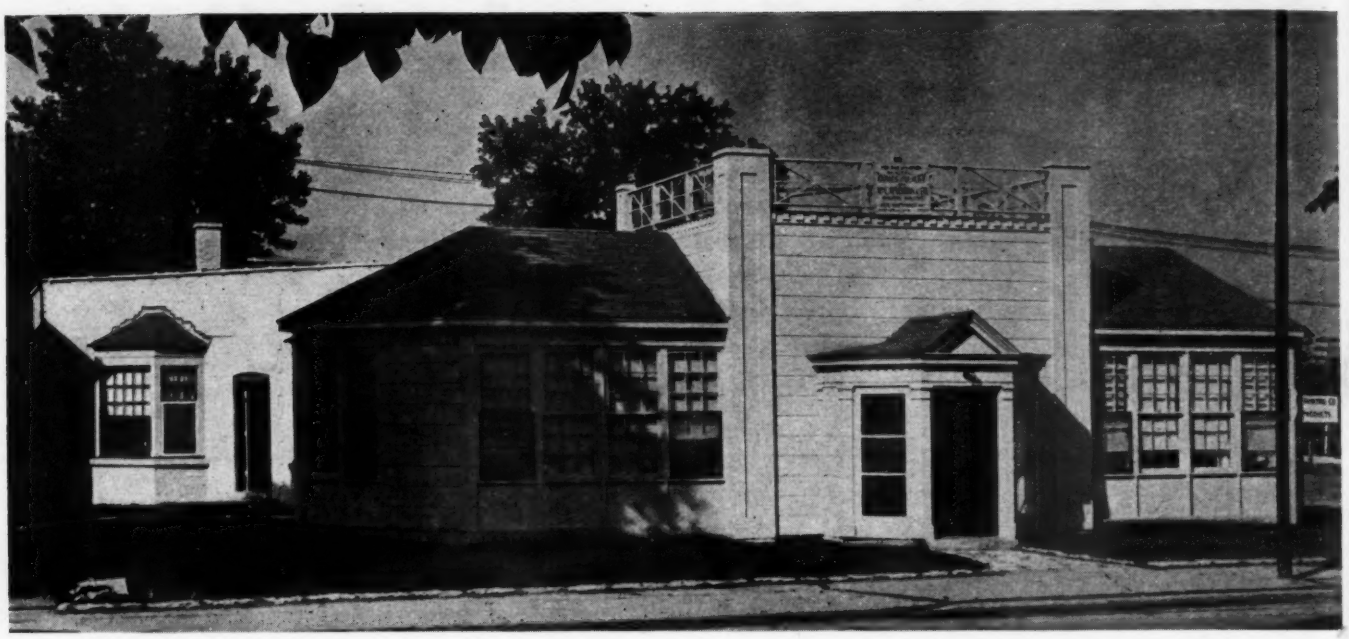
The building industry in the 30's became sold on the amortized mortgage with monthly payments. But this was not a brand new idea sponsored by FHA, for during the previous 100 years savings and loan associations had been using the amortized mortgage, and many builders had arranged their financing through them. They were most free from renewal commissions, second mortgages and similar features which have now been pretty well eliminated.

It must be admitted in any fair appraisal that FHA has made a real contribution to the building and home financing field, through its standardization of home financing plans. It has also exerted pressure which has forced down interest rates, lengthened loan maturities and increased the percentage of loan to value which institutions will lend. However, persons in the building industry must clearly understand that it has cost the public treasury for the FHA to operate, and therefore there has been an

(Continued to page 62)

FRANKLIN HARDINGE, Jr.

"FHA has cost the public treasury to operate—represents an actual subsidy. It is surprising that the building industry should seek to rid itself of government controls and limitations but at the same time advocate that such controls and competition remain for *financing*."



FRONT of four-apartment building, formerly a Chicago gas station converted under the Homes Use program.

Builders Busy with Home Conversions

Double-barreled program under NHA provides for both private and public financing. Need for additional units still critical in many areas.

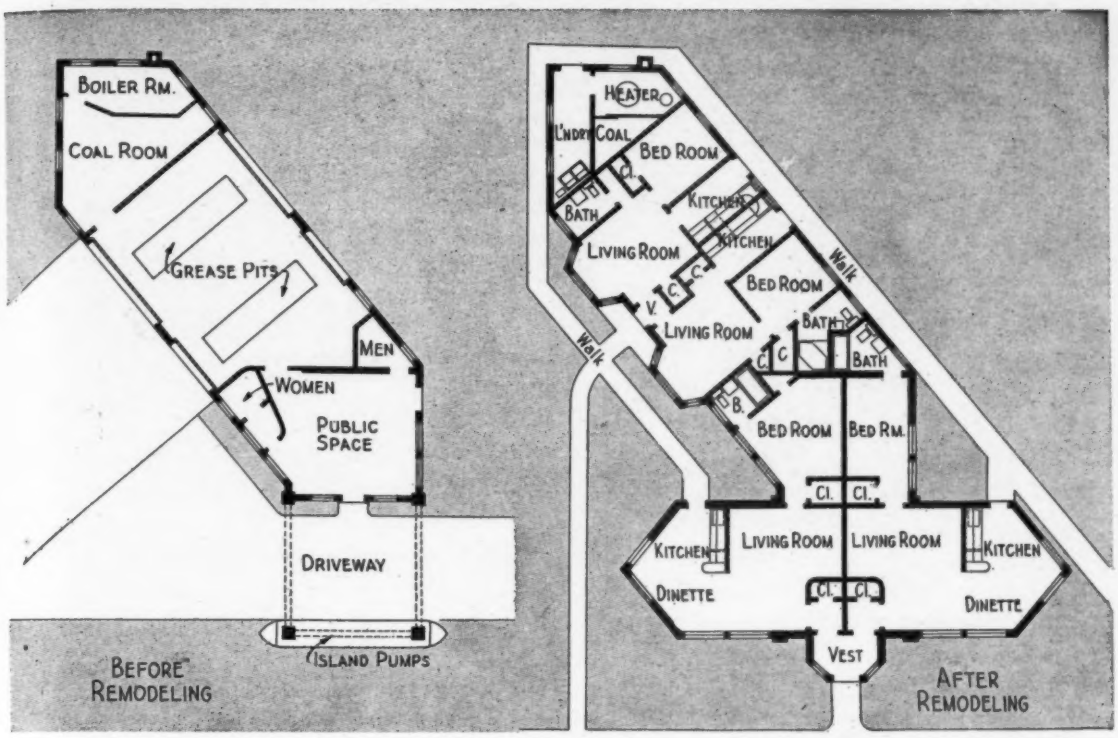
As in-migrant workers continue to jam the war production centers, thousands of additional units must be added to the pool of available housing through conversion. The ordinary job of cutting up large houses into rooms or flats is easily recognizable but other structures must be found to help swell the list of usable properties. For instance, the old gas station shown here looks hopeless but, with the use of salvaged materials and a small amount of new critical items, provided four excellent apartments.

Last available reports show that in the NHA Homes Use program 21,000 additional units are now being created throughout the country; thousands more are being processed. Beyond these, thousands will still be needed, presenting a continuing opportunity for builders to do their part and keep on the job.

Under the two phases of the program in the first five months of this year, FHA had received 9,647 applications for priorities on privately financed conversions and during the same period 11,698 units were leased by HOLC for conversion with public funds.

Property owners can convert with their own funds, or with the assistance of private financing institutions can get an FHA loan up to $5,000, payable in monthly installments over periods up to seven years. Materials can be obtained on an equal basis with

BEFORE conversion into the apartment building, above, by Wm. C. McLennan Co., this abandoned and dilapidated gas station looked beyond salvage. Major structural change was the addition of the two wings and vestibule at front.



PLANS indicate changes in converting gas station to four apartments. Note how two units were cleverly arranged over grease pits; these were filled in with broken concrete from old drives and sealed with slab laid over top to make vermin-proof. Floors laid on joists over concrete.

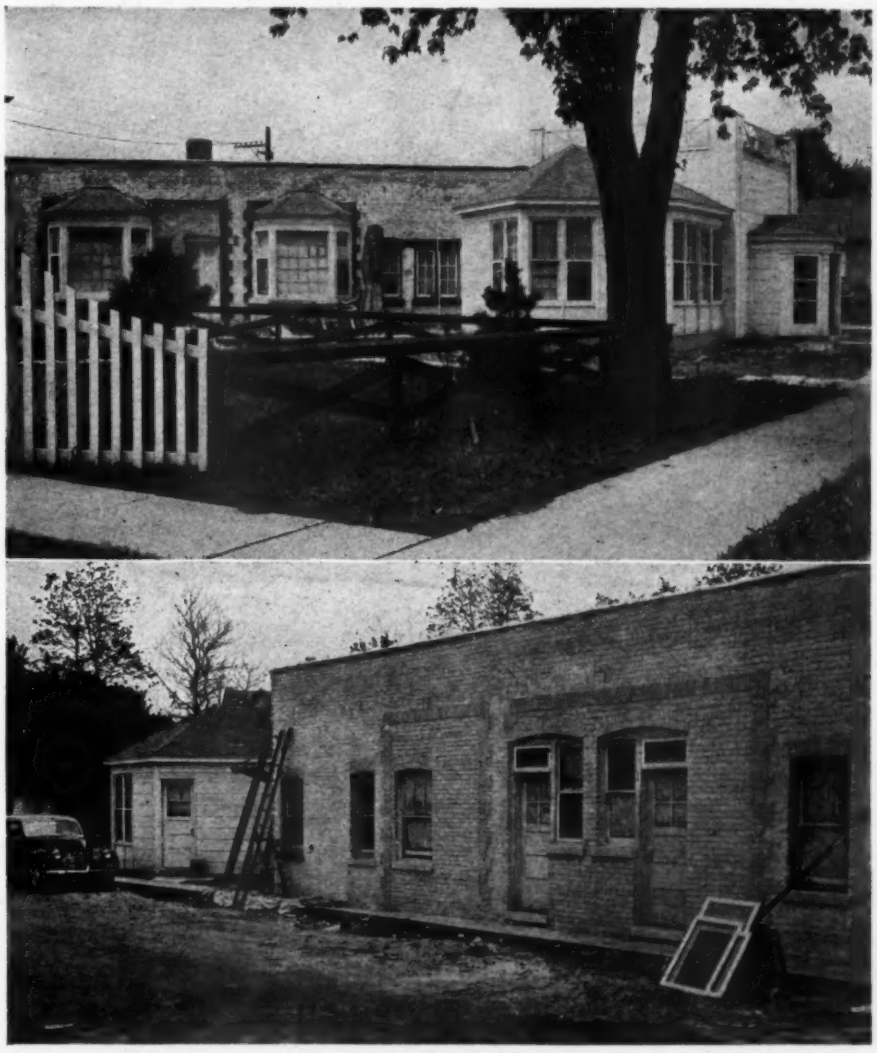
publicly-financed projects, through local FHA offices.

Under the publicly financed phase of the Homes Use program, the HOLC, a unit of the NHA, leases suitable structures in critical war housing areas for a period of seven years. The Government pays the owner a rental, takes over tax and mortgage payments, if any, and converts and manages the property. It is responsible for getting tenants and will rent one of the converted units to the property owner, if he so desires.

While a maximum of $2,500 is allowed for conversion costs of each unit under the Homes Use program, the average national cost to date is only $1,460. New temporary construction costs about double that figure.

The gas station illustrated was converted in Chicago under this HOLC program. Wm. C. McLennan & Co., home building organization, leased the property to the government and also acted as general contractor for the project. The two 3-room apartments rent for $45 a month, the two 3½-room units for $55. Architect was Nathaniel Koenigsberg.

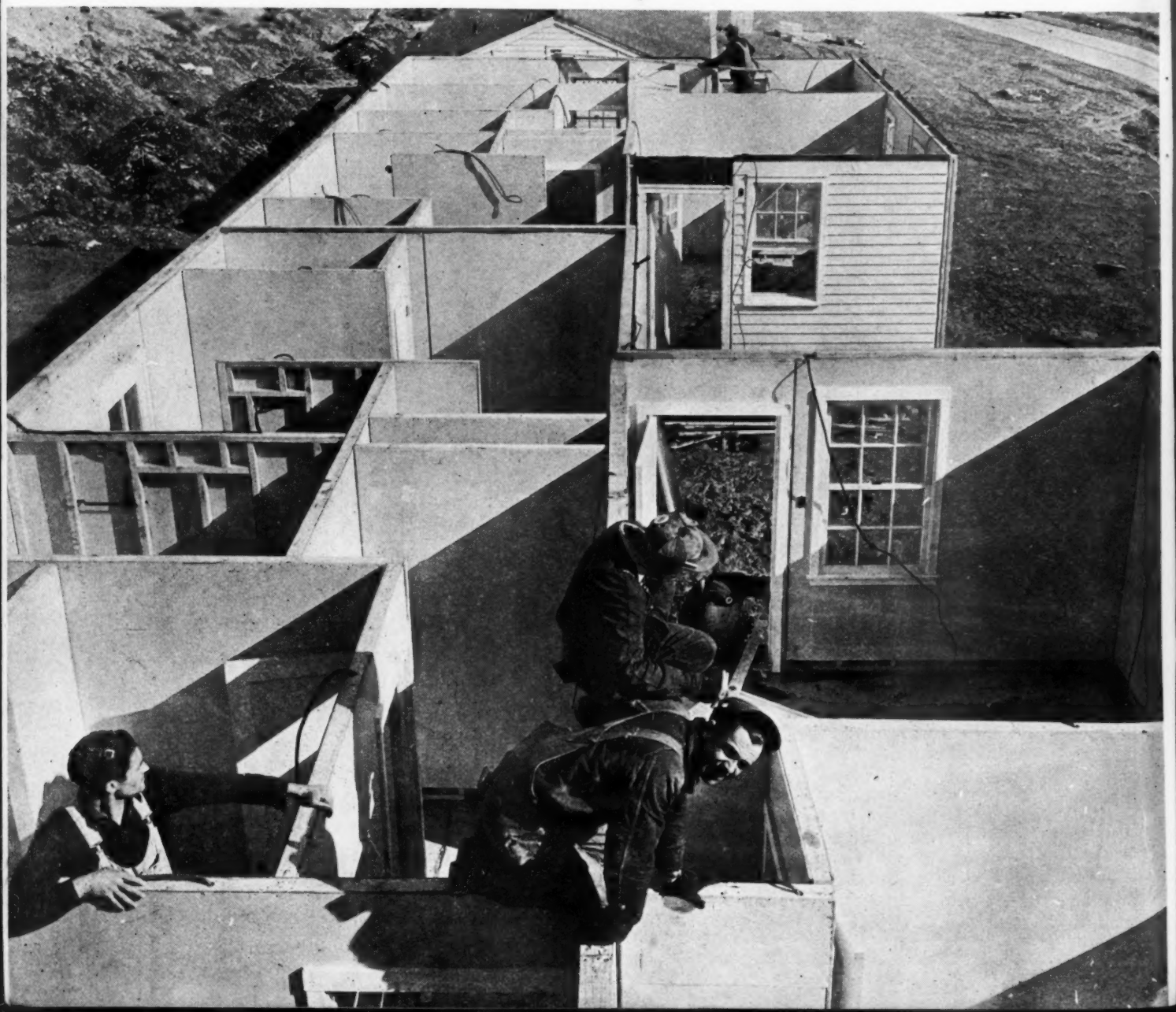
Mr. McLennan pointed out that from a critical material standpoint, this job worked out excellently. Filling stations such as this are well wired and use a good many feet of pipe. In this case, three of the baths are located so that old stacks were usable with slight changes; the other bath backs up to the laundry trays. Larger sizes of old pipe were exchanged for proper sizes for heating purposes. Old conduit was re-used.



CONSTRUCTION VIEWS show sides where grease pit doors were replaced with bay windows for living rooms and entrances to the kitchens; when painted, old red brick trim was hardly noticeable. The V-pointed wings provide rear entrances to the kitchens of the two front units of this 4-apartment conversion project.

ROOF SECTIONS built by Tonawanda, N. Y. lumber company are put in place by contractor Harry Stafford's crew at Dayton, O.

BIRD'S-EYE VIEW of full wall panels in place on Dayton, O., job as workmen start to apply top plates which tie them together.



Rush Dry-Built Homes by Train

BUILT in Tonawanda, N. Y.— erected in Dayton, O. Full wall panels shipped complete with siding, doors, windows.

WARTIME builders have done remarkable things, and tops among them is this story of war homes for civilian airport workers at Dayton, Ohio.

Built in a lumber company's shop at Tonawanda, N.Y., giant wall-sized panels for these homes were loaded in box cars and shipped to Dayton, Ohio, where Contractor Harry P. Stafford and Associates erected them as part of a rush government project.

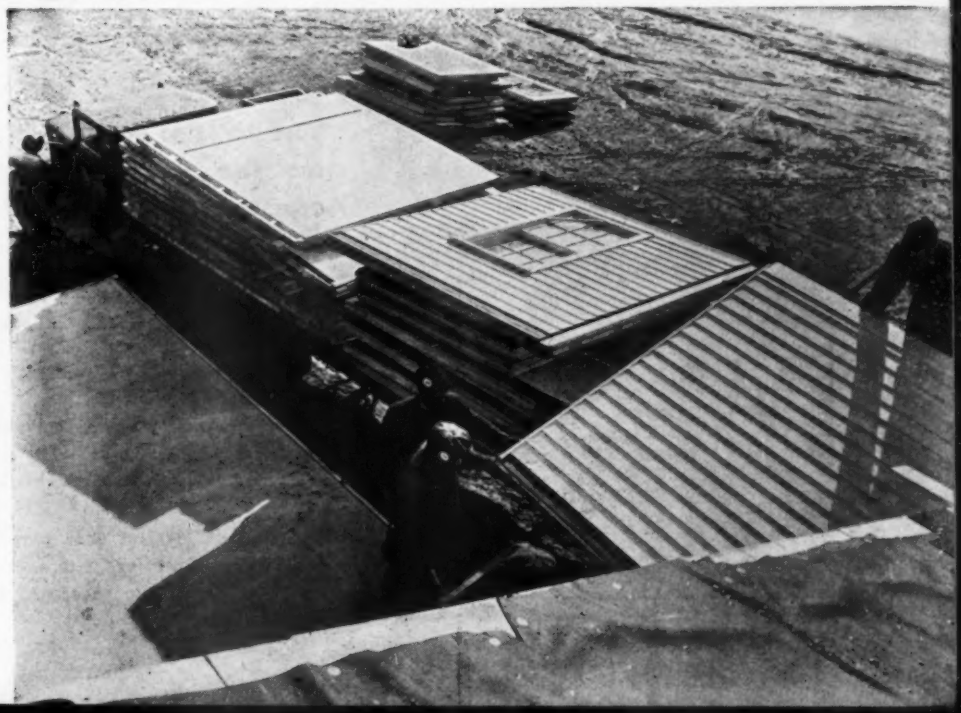
When the panel sections were packed into the box cars they were complete in every detail, including exterior siding (painted) and doors and glazed windows installed. Even the wiring was included in the panels ready to be hooked up at the job.

The system employed was developed by the Upson Company of Lockport, N.Y., in which dry-built full-sized wall sections are employed. Interior walls are cut from giant-sized sheets 8 feet high and the full wall in length. Sheets are pre-sized ready to receive the final interior finish, and are attached to standard studding by means of a patented float- *(Continued to page 79)*

WALL SIZE panels under construction in Bennett Lumber Co. plant at Tonawanda, N. Y. Note glazed windows already installed in section on table.

AT DAYTON, O., box car load of house panels is put on trailer truck for delivery to site where they were quickly erected as homes for airport workers.

Wall sections are complete in every detail, including wiring. A splined joint and top plate hold them together in rigid form..



TRUCK LOAD of wall sections, complete with siding, windows and doors installed, is unloaded at site of 250-home project.

CONSTRUCTION VIEW showing a 1½-story war house of a street of similar units being built by Clairson Construction Co., in Ottawa.

Canadian War Housing Shows Sound Planning

Housing Administration Co-operates with Private Building; Offers Good Standardized Plans for Economical Construction, Post-War Expansion

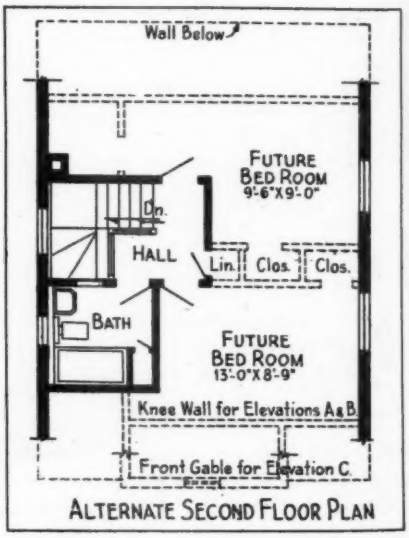
AT THE close of four years of war, private building in Canada is still vigorously doing its job—a creditable one. The Housing Administration of the Dominion deserves a large portion of any such commendation for its close co-operation with the builders, its leadership in fighting for private building, and down-to-earth approach to the war housing problem. Frank W. Nicolls, as administrator, has headed up the Administration staff and is largely responsible for the results achieved.

The quality of construction is particularly high, and the planning looks ahead to continued use of such housing after the war. Construction views on this page show a typical four-room unit, being built from standardized plans worked out and available to Canadian builders in blueprint form from the Housing Administration.

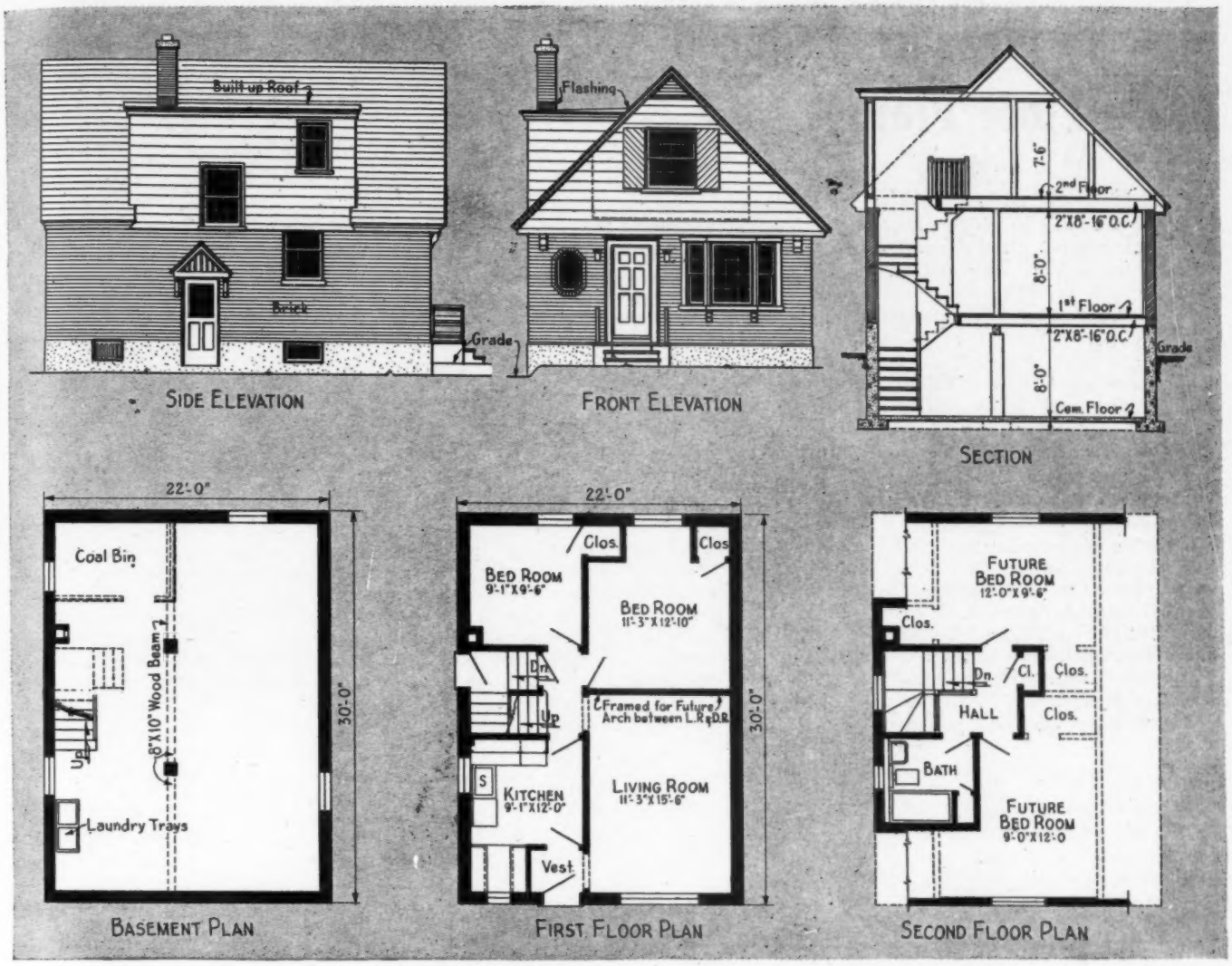
The first of two articles on the planning and construction of privately built war housing in Canada; the second will follow in an early issue.

LEFT: Workman laying up masonry walls of a Canadian house in their privately financed program; note 8" x 8" air cell brick used.

RIGHT: Alternate second floor plan of the 1½-story design above for the three alternate elevations at the bottom of opposite page.



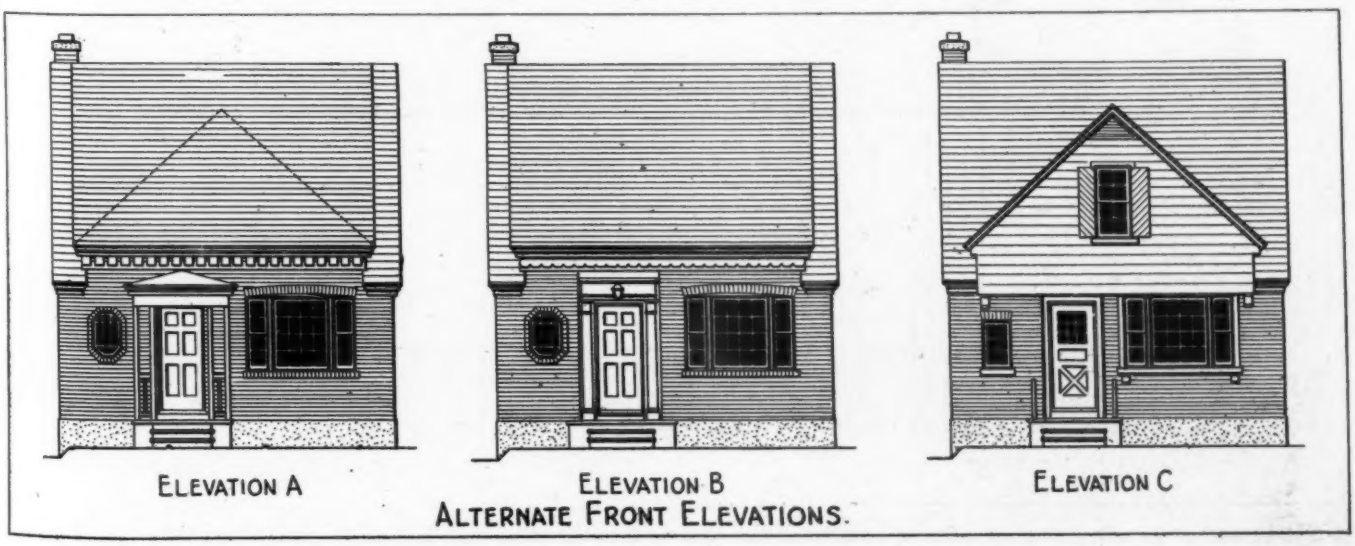
ALTERNATE SECOND FLOOR PLAN



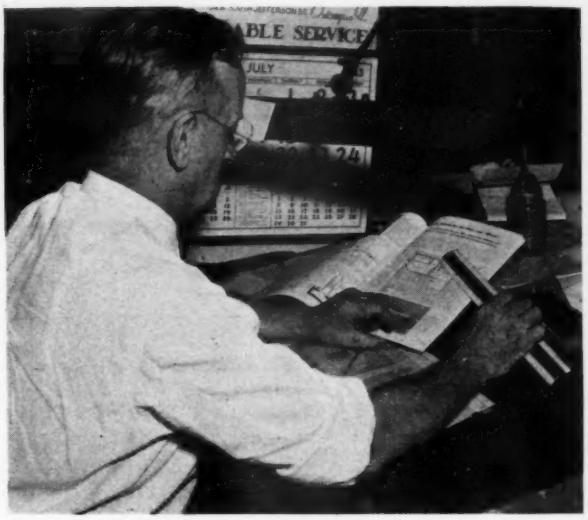
TWO ELEVATIONS, section and floor plans of the 1½ story design at left; note framing for future arch from living room.

It will be seen that provision is made for two future bedrooms on the second floor, the hall and bath being the only portions finished. This is a temporary inconvenience for the duration, but will be an advantage for the many years of occupancy following. Also, in framing the wall between the living room and larger bedroom, a future arch between these rooms will allow conversion to a good-sized combination living-dining room when the second floor is completed; it will give a three-bedroom house within a compact 22 x 30 overall size.

To avoid monotony and maintain the advantages of using the same basic plan, three alternate elevations, as shown below, are available. These require a different arrangement of the future bedrooms and closets on the second floor; otherwise the plan remains the same. This neat little design is worth careful study, both as war housing and a possibility for the low-cost post-war market. It is designed to sell for $4,000 in Canada.



How to Measure Reduced Scale Floor Plans



IN STUDYING reduced size reproduced floor plans, in which the scale to which the plans were drawn no longer applies, it is quite often desired to measure or "scale" them for more complete information as to the widths and the locations of windows and doors, sizes of vestibules and closets, wall spaces, and the like.

Using a standard carpenter's rule, or an office rule, it is possible to quickly produce a scale that will "fit" such reduced plans, using the method illustrated below.

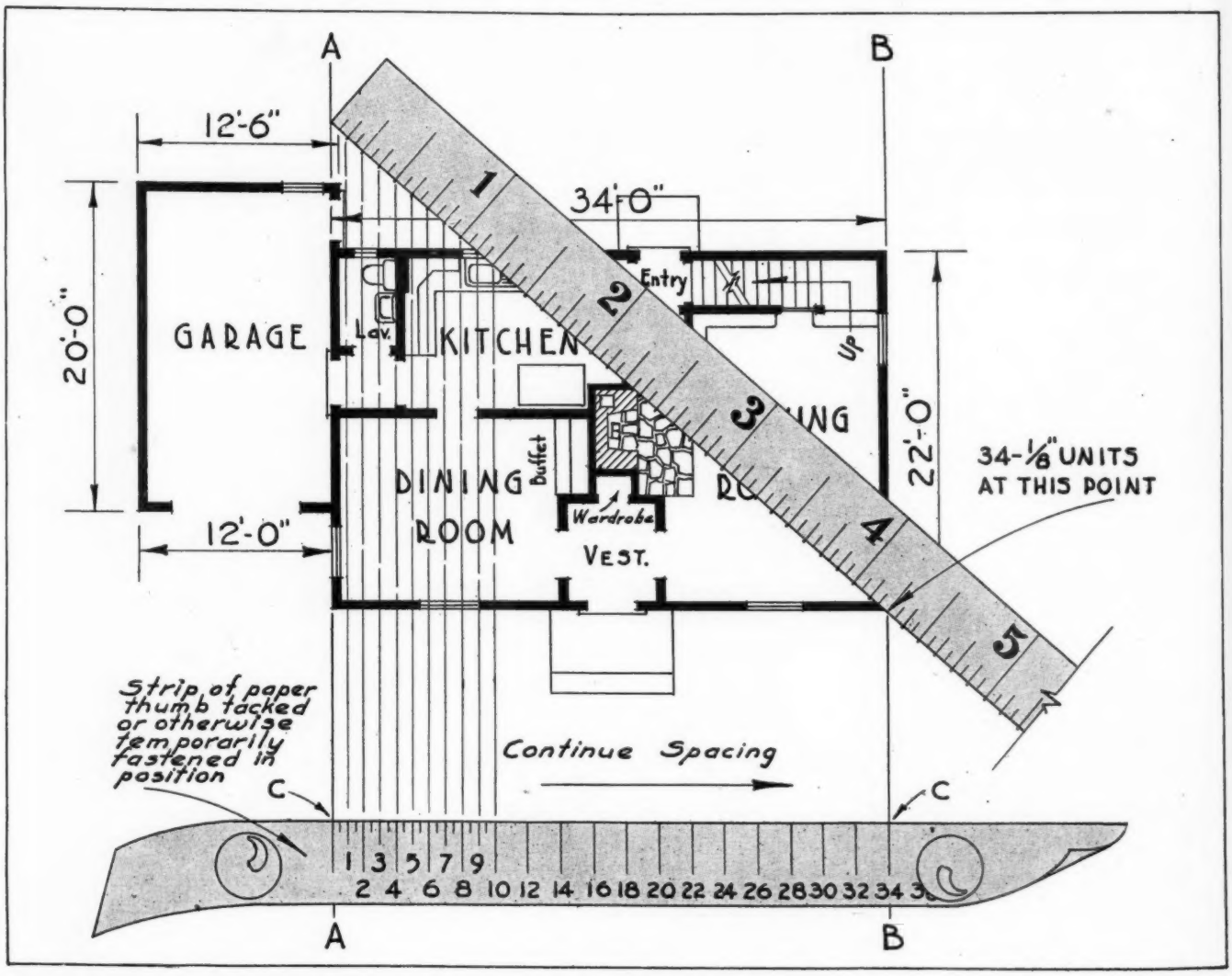
1. Thumb tack or otherwise temporarily fasten a strip of paper below the floor plan, with the edge of the paper exactly parallel with the horizontal lines of the plan.

2. Extend vertical lines A-A and B-B past the right and left edges of the plan drawing as reproduced, allowing these lines to reach the edge of the paper strip at points C.

3. Place the standard rule on the plan at such an angle that the total number of 16ths, or 8ths, or other unit of measurement as the case may be, contained between the parallel lines A-A and B-B, equals the number of feet as given for the overall width dimension of the plan. In this example eighth-inch units were used, since the required number of units (34) in sixteenths fails to "reach" the width of the plan.

Three-sixteenths units, or quarter-inch units could have been used of course, but by using the smallest possible unit the angle at which the rule must be placed across the parallel lines is reduced.

4. Use a sharp pencil, point off onto the plan each one-eighth unit, and from these points accurately draw light lines, parallel to A-A and B-B, downward onto the strip of paper, producing your scale. The strip of paper, when removed, becomes a miniature "tape" which may be used for measuring any detail of the plan.



A SIMPLE method for taking off dimensions on a published floor plan or drawing which does not match any divisions on a regular scale.

Wartime Face-lifting Shows "How" for Later

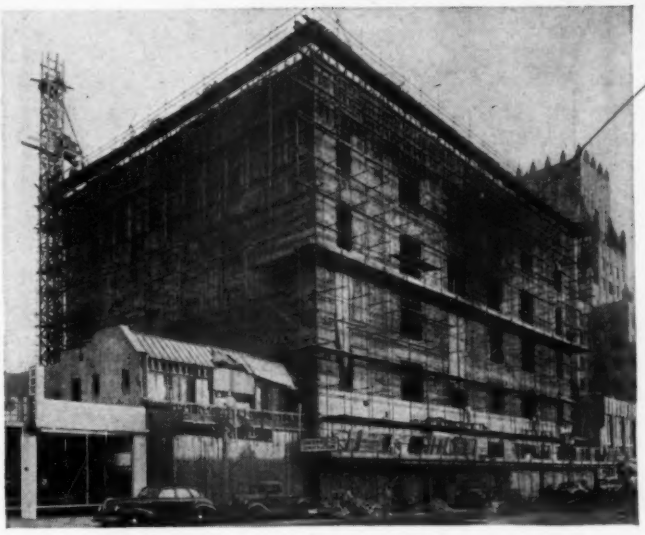
A RECENT building improvement in the Los Angeles area points the way to a successful handling of many similar face-lifting and wall-reinforcing jobs in the field of business buildings in the post-war period.

A control office of the Southern California Telephone Co. had outgrown its structure, a substantial 3-story brick building of steel frame Class A construction, having a ground area of 135 by 105 feet. This building had been originally framed for three additional floors. However, changes in the State building laws following the Long Beach earthshock made it possible to add only two floors; and this was done in the remodeling operation by use of a welded steel frame and light-weight aggregate concrete floors.

The matter of strengthening the brick exterior walls and also of improving the overall appearance of this prominent business building was given careful study both by the telephone company officials and by their architectural advisor, Paul Jeffers. The following procedure was adopted:

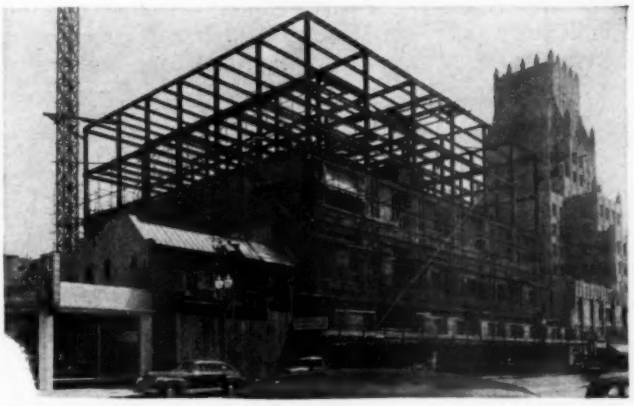
The outer surface of the brick was stripped off, 8 inches deep on the first story and 4½ inches deep above. Steel reinforcing was then anchored to the exposed brick face and a new exterior wall of concrete was poured. The contractor used wood slip-forms, operating in 4-foot lifts. Light colored terra cotta facing was then applied over the vertical pilaster sections and as ornamented belt courses, foundation course, etc.

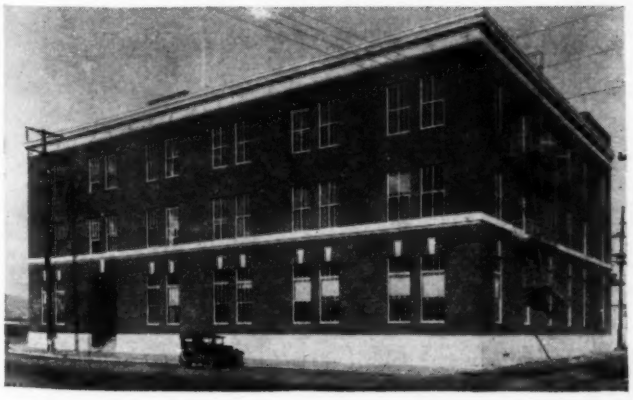
This substantial building improvement was carried out with little interruption to the regular business use of the premises. The restyled structure in its strengthened, enlarged and rejuvenated form is now a distinct addition to its prominent, fast-growing business community.



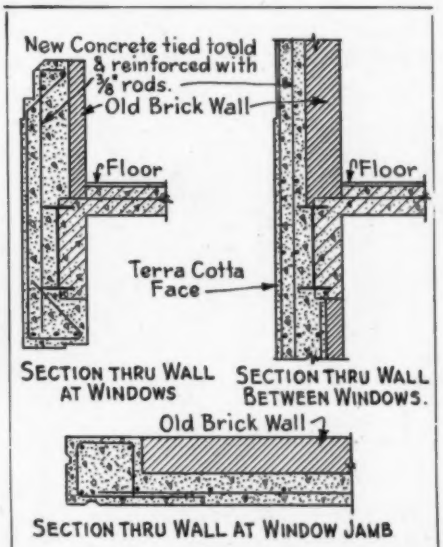
JOB COMPLETE—clean, modern, strong; a greatly improved structure at quite reasonable cost.

AT LEFT, the slip-forms for new concrete are in place for final pouring; at base terra cotta finish is seen being set.





BEFORE remodeling, 3-story brick walled structure in California shown at left; above, welded frame for two additional upper floors are in place; outer surface of brick panel walls has been removed for refacing.


New Concrete tied to old & reinforced with ⅜" rods.
Old Brick Wall
Floor
Floor
Terra Cotta Face
SECTION THRU WALL AT WINDOWS
SECTION THRU WALL BETWEEN WINDOWS.
Old Brick Wall
SECTION THRU WALL AT WINDOW JAMB

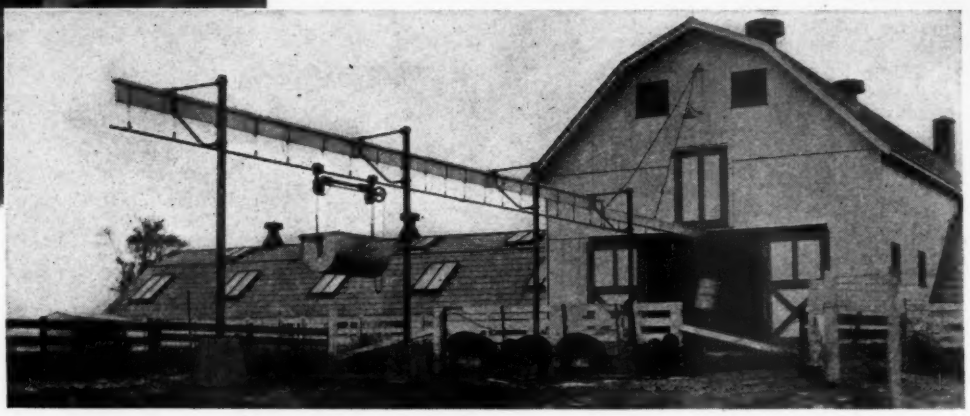
Construction Details Show How Old Commercial Structure Was Shockproofed, Enlarged, Restyled

ACTION EXPECTED on the Farm Front

PLENTY of fresh water means more milk; overhead carriers save labor.

Additional buildings and labor-saving improvements needed for production and care of farm crops

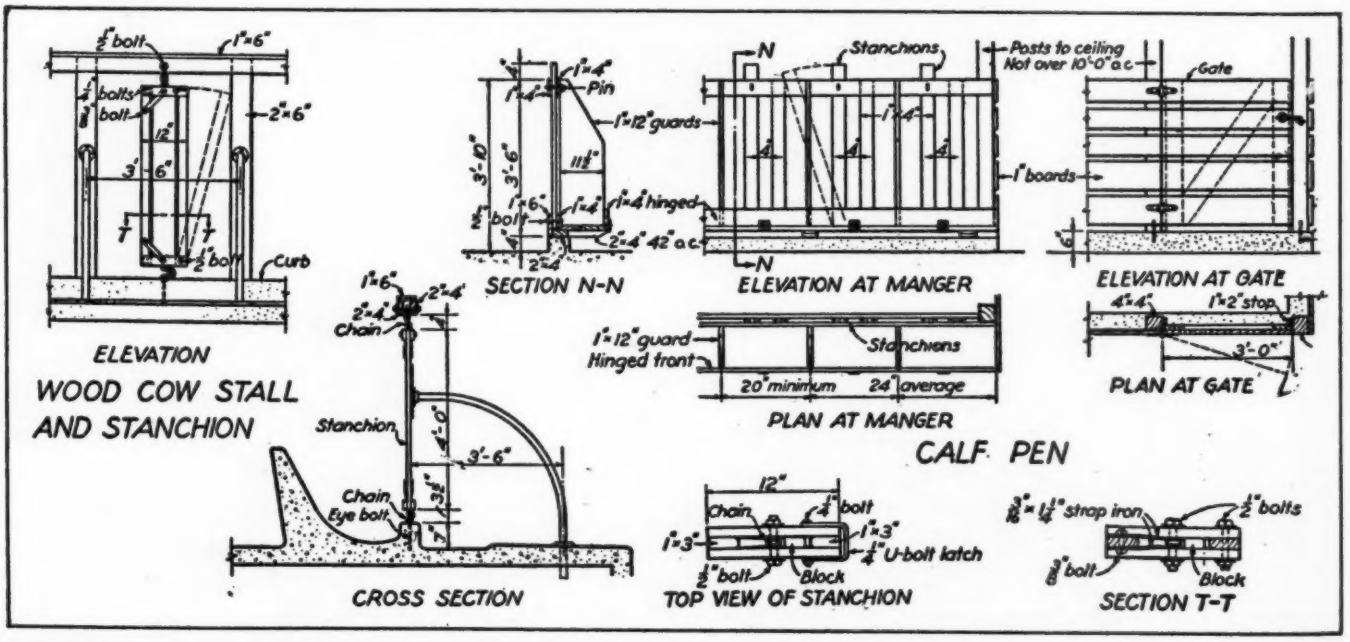
WORK FOR BUILDERS, CARPENTERS, DEALERS



WITH war-plant construction work rapidly approaching completion, builders can now turn to another most important war job—that of helping to plan and build the farm structures and improvements urgently needed for the Government's food production program. Farmers in every agricultural county are planning on additional new buildings, as well as on remodeling and repairing many of their existing buildings—all with the idea of caring for more livestock and crops with less labor. They are urgently in need of the assistance of experienced carpenters, builders and retail building supply dealers in this work throughout most of the country.

The Department of Agriculture and the County War Boards have put it up to the farmers to greatly increase their 1943 and 1944 production of food crops, dairy and poultry products and meat animals, and this requires more and better buildings. Official approval for such desirable farm building projects, costing more than $1000 per farm, can now be obtained. Jobs for less than $1000 require no special permit; and that is FIVE TIMES as much as has been spent on the average farm annually in the past decade.

More poultry houses are needed for success in raising more high priced eggs and unrationed fowl for meat;



STANCHION and pen details recommended by Department of Agriculture engineers to permit farm building with minimum use of steel.

every back yard should have its flock and every farm its enlarged poultry department.

A further 20 per cent increase in dairy products is asked; this means more stables that come up to modern sanitary standards; more silos and feed storage houses; more water piped to the stalls and more labor-saving carriers, milking machines and other up-to-date equipment; more milk houses, coolers, separators.

More beef cattle and an expansion in sheep production call for shelter buildings and enclosures, self-feeders and feed storage facilities, more fencing and better fencing.

The storage of corn and grain is still a critical problem and many farm cribs and granaries are needed; also adequate ventilated storage buildings for potatoes and all root crops, "victory garden" store rooms, and refrigerated fruit storage.

Hog raising is the big industry of the corn belt, and a great increase in pork production depends in no small measure on better shelter and buildings to keep the little pigs healthy. What farm buildings, especially hog houses, mean to the war effort is illustrated in a report from Iowa in the June issue of Fortune Magazine. It says:

"The spring's birth rate of pigs in the pens was enormous, but so was the death rate. A lot of early pigs, which are among the most helpless of newborn mammals, were lost in the cold, wet weather. And now many survivors of all this mortality are crowded in pens built to hold far fewer, exposed by bad sanitation to all kinds of contagious ills—hog cholera, necro, and swine influenza."

A Big Job for the Building Industry

A sanitary, well lighted central farrowing house, adequate concrete feeding floors, self-feeders and portable shelters for the hog lot are the answer to this problem; and lumber dealers and carpenters can supply that answer.

There are thousands of patriotic—and profitable—farm building jobs waiting for *American Builder* readers, if they will but call on the farmers and offer their services, or write a letter, or advertise in the local papers read by these prospective customers and clients.

If *you* are coming off a war-plant construction job, or

FARM BUILDINGS

Why—What—When?

a war housing job and want to keep busy patriotically as a builder, turn now to the Farm Front and help America's six and a half million farms to solve the farm labor shortage and produce the extra food crops now so urgently needed.

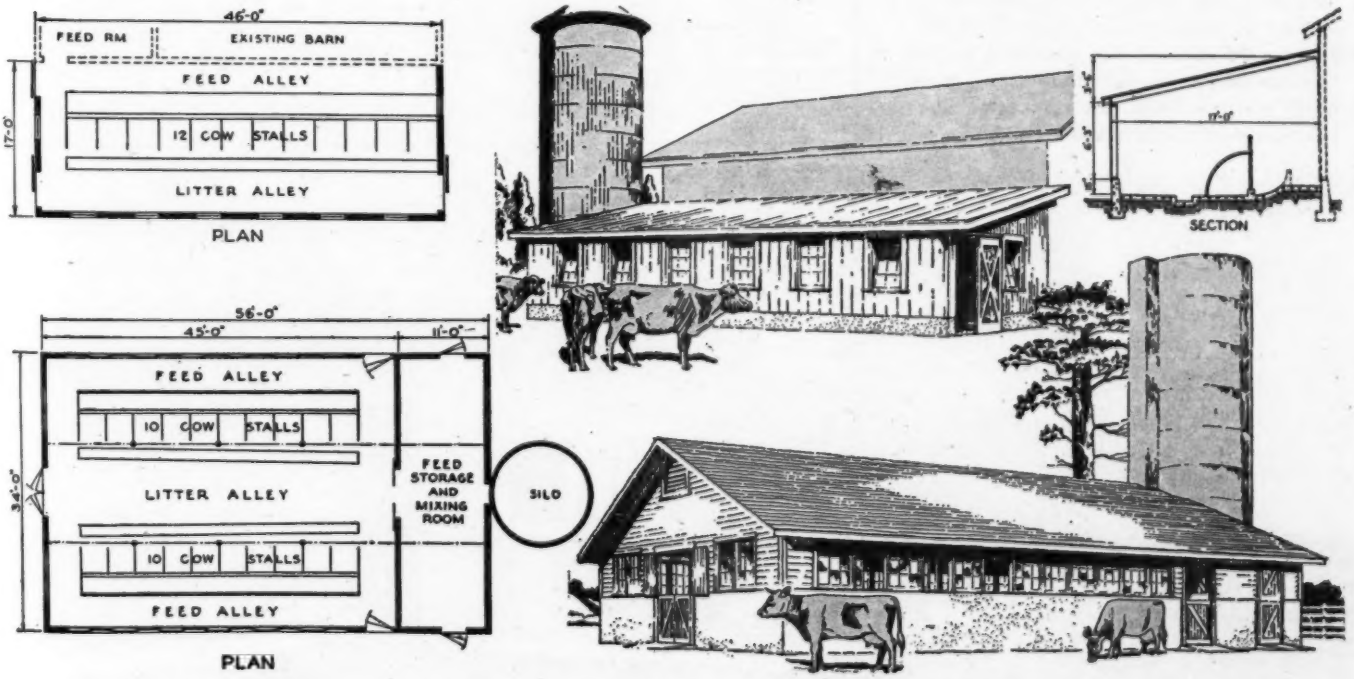
The farmer who has good buildings can get along with less hired help. With their built-in conveniences such as running water, electric lights and power milkers, carriers and feed grinders, good buildings take much of the hard work out of farming and permit dad and the girls to carry on with the crops and live stock. But they can't handle these building improvements unassisted.

Considering present high prices for all farm produce and the prosperous condition of the farmers, this really is big business. Farm buildings and farm homes have been neglected for years. Now, as a war measure, they must be fixed up to increase their efficiency as vital food production centers, and experienced builders and contractors should play a leading role in this campaign.

In line with the program to increase the production of dairy products 20 per cent, the U. S. Dept. of Agriculture has recently prepared a recommendation for a "wartime" dairy barn that requires a minimum amount of hard-to-get materials for its construction. Plans for this metal-saving barn have been prepared by Geo. L. Edick, chief draftsman in the Department's division of agricultural engineering. He gives this general admonition, as a starter:

"Those who plan to build or enlarge dairy barns should determine the limitations placed on building. Applications for construction exceeding $1,000 must be filed with the county U.S.D.A. War Board, and before filing an application it might be advisable to consult your State College

(Continued to page 86)



HOUSE the additional dairy cattle in this low-cost lean-to shed, 12 stalls; or in a new stable with 20 stalls, feed room and silo.

More Healthy Pigs With This Hog House

THE WAR WORKERS on the farm front are needing a lot of help from rural builders in carrying out their plans for a big increase in pork production. Central farrowing houses, portable hog lot shelters, concrete feeding floors and self feeders are some of the construction items that are in urgent demand today.

Modern methods of pork production favor the central farrowing house. The principal advantages of the central house are convenience, efficiency and sanitation. More pigs are saved in the well-managed central house than with other systems because the central house provides dry, warm quarters and can be kept free from parasites.

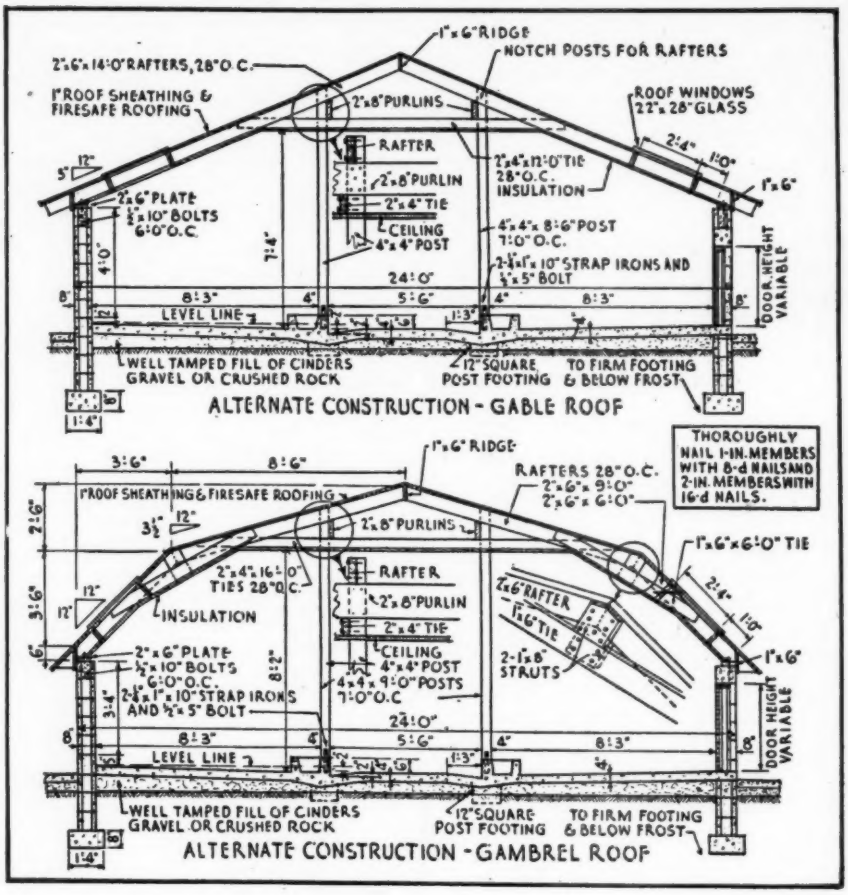
Early farrowing is possible with a well-insulated central house. The size of house required depends upon the number of sows kept and upon pen size and width of alley desired. Pens 6 ft. wide by 8 ft. long are commonly used where small sows are kept. For medium size to large sows, pens about 7 x 8 ft. are more satisfactory.

It is common practice to use 4 to 7 sq. ft. of glass area per sow. In the northern half of the United States where it is important to conserve heat at early spring farrowings, it is best to have not more than 4 sq. ft. of window glass area per sow.

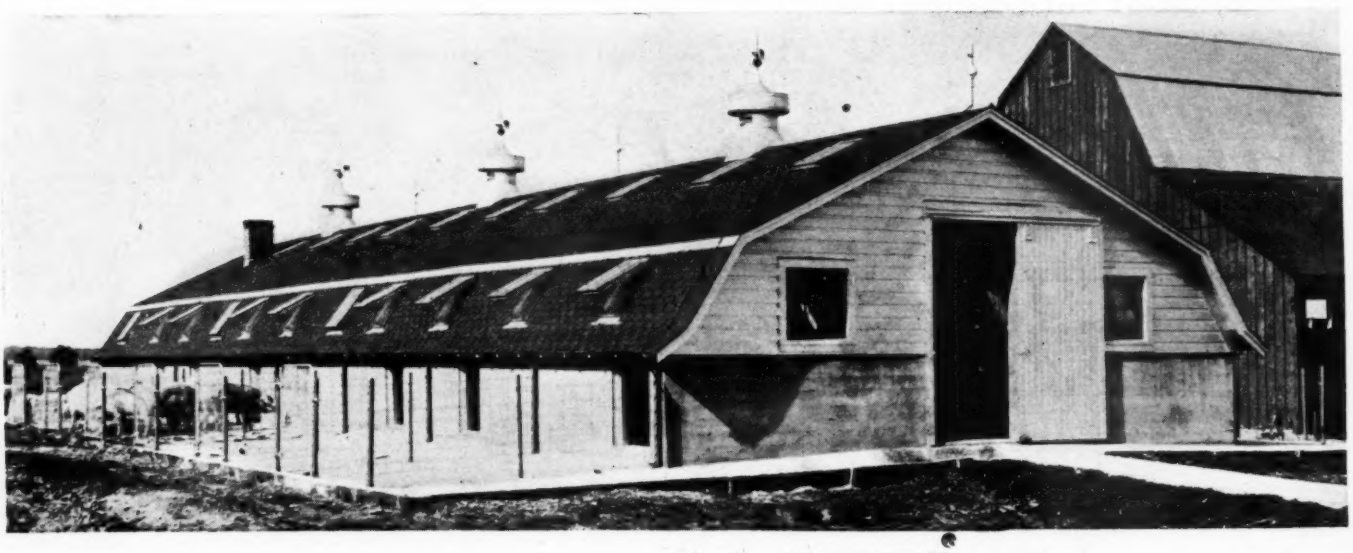
Cold, damp houses at farrowing time are responsible for heavy losses of young pigs from pneumonia and colds. For best results the foul, moist air must be removed by ventilation. Heat is often supplied for a few weeks at farrowing time. Pigs seem to do best with temperatures around 65 deg. F. A small stove located in the central alley or in the corner of the feed room provides needed extra heat.

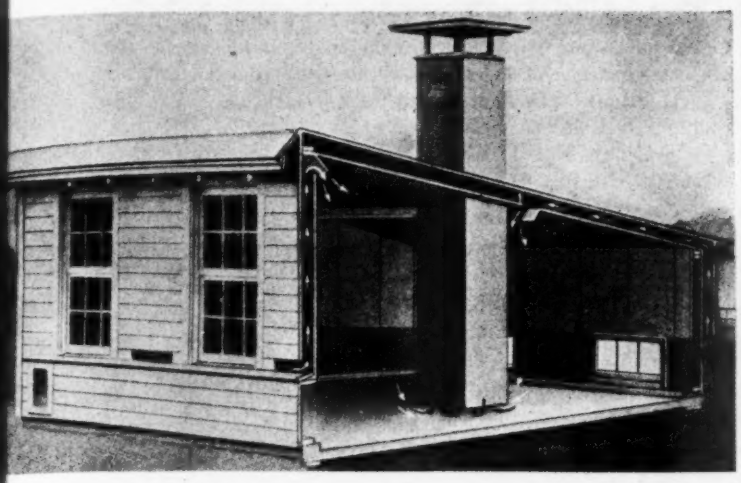
To reduce labor costs, a feed room is often built in the farrowing house. Self-feeders of large capacity may also be built into the side of the feed room, providing access by the hogs from the paved lot.

There are several other important considerations in planning the central farrowing house: Width of central alley may vary from 4 to 8 ft. Many find a width of about 5 ft. most convenient. Where it is planned to drive through the central alley, a width of 8 ft. is required. Ceiling height of 7 to 8 ft. is generally considered most desirable.

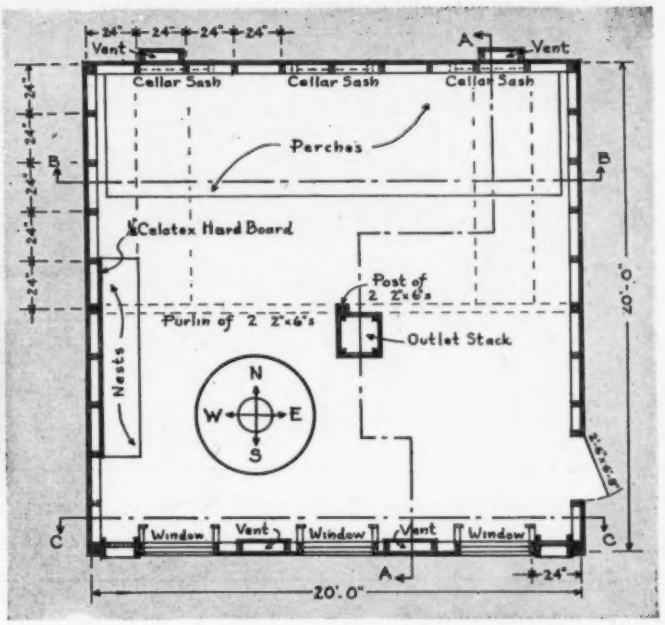


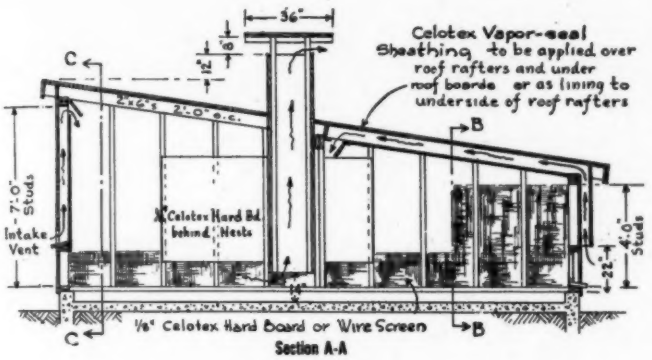
CENTRAL farrowing house, 24 by 44 feet, of permanent and sanitary construction; recommended by the Portland Cement Association. Both the flat gambrel roof, illustrated, and an alternate gable construction are shown in the detail drawings, right. Roof windows admit sunshine during both morning and afternoon.

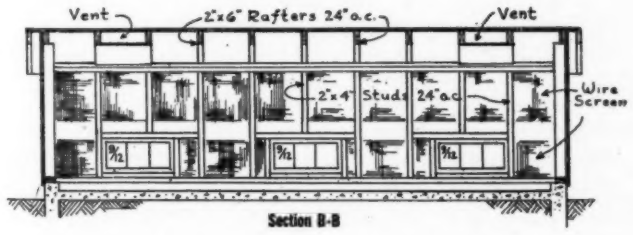


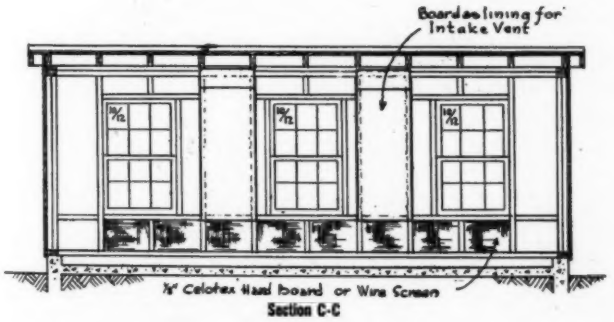


LAYING HOUSE, 20 by 20 feet, as recommended by Celotex Farm Division experts for an insulated and ventilated high-yield egg structure for a flock of 130 to 150 birds. Insulation board soon pays for itself when installed according to recommendations.




Celotex Vapor-seal Sheathing to be applied over roof rafters and under roof boards or as lining to underside of roof rafters
Celotex Hard Bd. behind Nests
Intake Vent
1/8" Celotex Hard Board or Wire Screen
Section A-A





An Insulated Poultry House

POULTRY can be increased faster than about any other class of farm livestock, and so it is not surprising that the great war need for more food production and the present high market price of eggs and dressed fowl should have caused farmers everywhere to expand their poultry operations. Back yard flocks—a worthy companion to the Victory garden—have also multiplied by the tens of thousands.

Hens to be profitable must be housed in a proper manner; and lumber dealers, carpenters and builders are finding a big and growing demand for laying houses, brooder houses, range shelters, self feeders, and other poultry equipment. Such items need not be expensive; but they should be properly designed and strongly built to avoid troublesome upkeep and wasteful labor in caring for the flock.

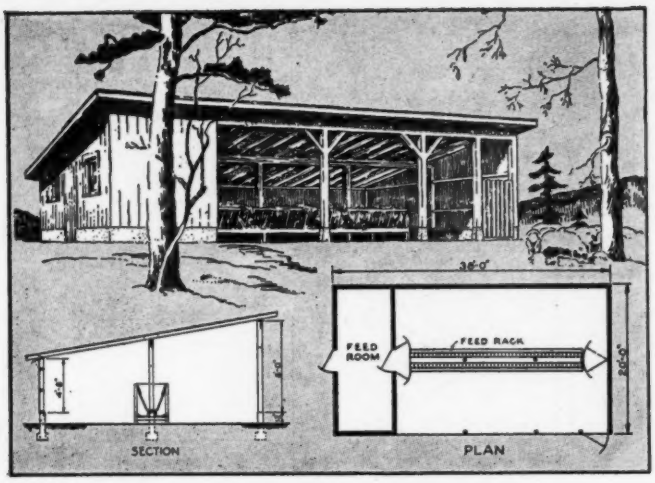
Many individual ideas for poultry houses are in successful use; they are mostly good and probably well adapted to particular needs. However, as a design that can be recommended generally, we believe the accompanying drawings for an insulated laying house, developed by the Farm Division of the Celotex Corp., will prove serviceable. It is offered as part of the current educational campaign based on the slogan, "More food for victory from insulated buildings."

The practical size unit to build, these poultry experts point out, is 20 by 20 feet. This size will satisfactorily house up to 130 heavy type birds or 150 light. For successful operation in cold weather it is important that a full flock be kept, since too few birds will not supply enough body heat to keep the house warm and ventilated.

To house 250 heavy or 280 to 300 light breed birds, a house 40 by 20 feet (two 20′ x 20′ units) is built. A partition separates the two units. Plan and details are exactly the same as for the 20 by 20 foot house, with the exception of the partition. Houses longer than one and one-half times their depth do not ventilate well. A tight wood or insulation board partition is necessary to secure ventilation control. Square houses, greater in depth than 20 by 24 feet, do not permit good ventilation control.

To house larger flocks, additional 20 by 20 foot units are built or added until desired capacity is obtained. It will be found advantageous to include a feed room with larger flocks. Some prefer the feed room in the center of the house and some build it at one end. In large houses, the best location for communication doors is just ahead of the dropping boards.

The poultry house should be located on dry, well-drained ground away from other farm buildings, with access to good range. It should be convenient for the caretaker.



SHEEP shed with enclosed feed room.

Protect Cattle and Sheep

SOME SAY that farm animals don't need shelter; and it's true that body heat in a well fed steer, hog or sheep will keep it fairly comfortable. Still, expensive feed should not be used for *fuel;* and food used for heat energy doesn't put on any fat. So stock shelters are in demand to conserve feed and increase meat supply.

For cattle in the feed lot, the shelter detailed below should prove desirable. It is excellent for protecting the stock from the sun in summer and from storms in winter. Locating the shed next to a larger building or wind-break will provide additional protection. It might also be used for sheltering dry cows or young stock on a dairy farm. The plans show an L-shaped shed, but it could be built in a straight line.

Doors in the rear wall permit filling the mangers from a truck. The mangers could be omitted if the

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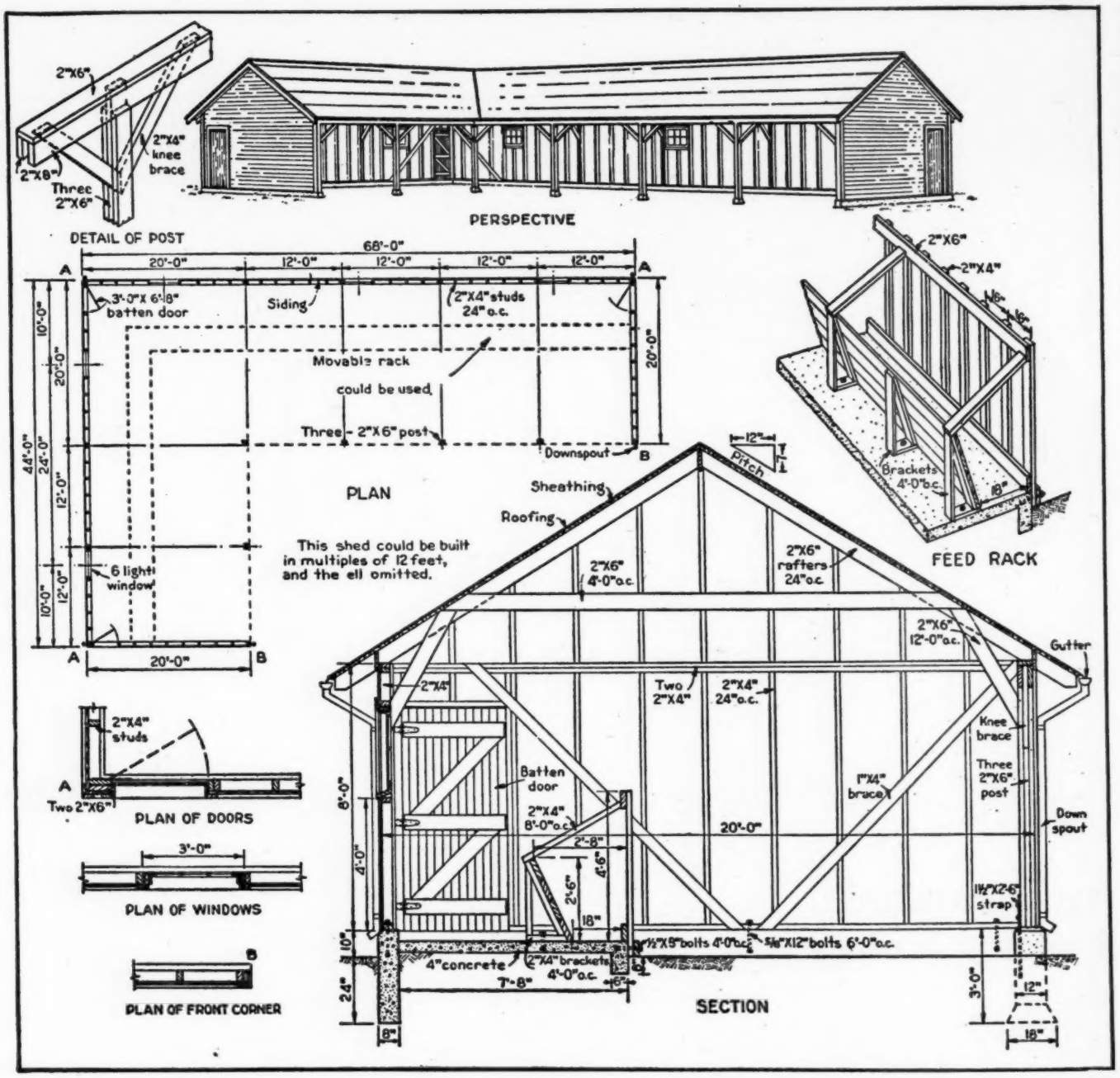
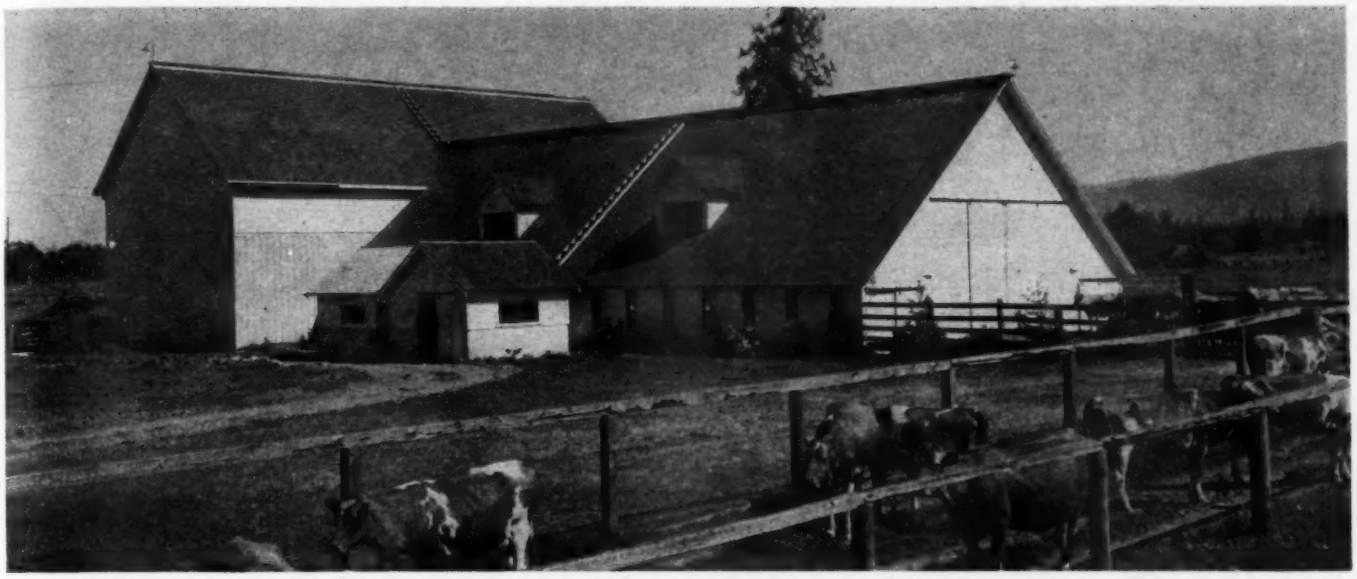


CATTLE SHED to shelter 40 to 50 head of steers. Construction details recommended by U. S. Department of Agriculture.

What builders should know about

THE FARM ELECTRIC



WIRING—LIGHTING—COOKING—PUMPING—WATER HEATING—POWER

HIGH-LINE electric power is now available to most farms, and many farmers are planning to bring in and use this power to help them solve their wartime farm labor problems, both in the farmhouse and farm buildings. Many will remodel and modernize the farmhouse, installing modern kitchens, bathrooms, light and power, and electrifying many of the farm operations such as milking and milk cooling in the dairy, feed grinding, water pumping, poultry stimulating, soil heating and farmstead illumination. *American Builder* readers are taking an active part in planning and building for their farm customers and clients, and should pay special attention to the electric wiring and appliance installation angles of every farm and rural building job.

P. H. Powers of the West Penn Power Company, Pittsburgh, recently told the Pennsylvania Farm Equipment Dealers Assn. that the newest and most revolutionary contribution to farming is electric service. To the farm home it means, he said, the removal of most of the differences in the standard of living between the city and the farm, or the rich and the poor; and in the farm operations, it takes over many of the back-breaking jobs and offers an unlimited field for the development of better farming processes.

Contributions to Farming

However, like any other advance in the art of making a living from agriculture, electric service is a contribution only if it results in an increase in the farmer's profits and well-being. Advocates of farm mechanization by means of electricity assume a responsibility that the end result of their efforts must contribute a real advantage to the farmer.

"We must look at our sales job strictly in terms of benefits to the farmer and we must furnish a complete and dependable service," Mr. Powers stated, adding that an adequate wiring job is the first essential for safe and satisfactory use of electrical equipment. He cited a recent incident on a farm in Pennsylvania which illustrates the penalty of putting in wiring of too little capacity. The local farm equipment dealer, it seems, sold this customer a milking machine. He promised him labor-saving, cleanliness, time-saving, natural and uniform milking, and dependability. The dealer was on hand to supervise the installation of the machine when delivered. However, the device would not operate nor produce the results claimed; it was refused by the farmer and returned to the dealer.

Nearby another dairy farm, electrified about two years before, had since installed many household appliances, a milking machine, a milk cooler and now will add an electric sterilizer. All of this equipment has operated as promised, has produced the results claimed.

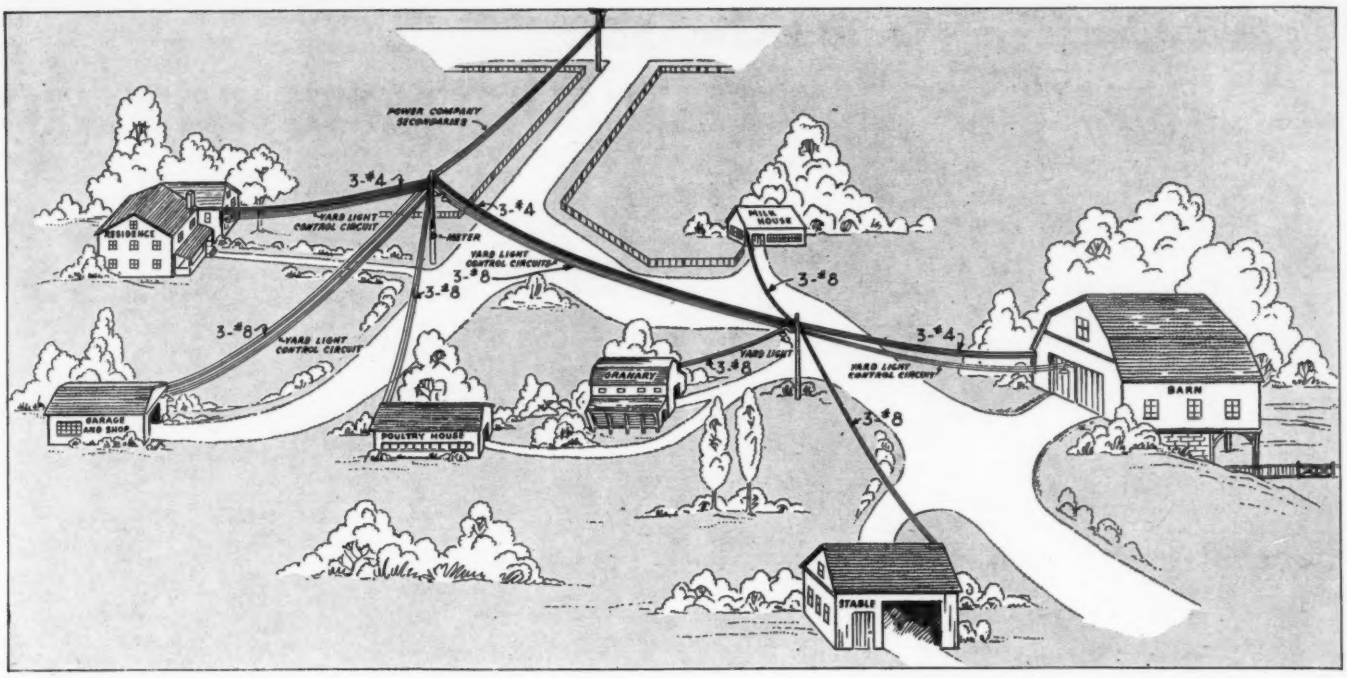
What was the difference? *It was the wiring.*

In this second instance, the farmer had made his initial wiring installation an adequate one, thus saving himself money and insuring his ability to use additional devices as he could afford to buy them.

In the first instance, no effort was made to determine whether or not the customer's wiring would operate the milking machine. The wiring was inadequate, the machine would not do the job it was designed for and, through no fault of the mechanical equipment, the electric milker could not be used.

"Now, try as we may," Mr. Powers confessed, "utility companies often fail to convince the farmer of the need for adequate wiring. It often takes just such a shocking experience as the above to prove to the farmer how important his wiring is and that our efforts to persuade him to wire adequately are in his own best interest."

As a general thing, the amount of power made available to the customer by the electric utility company is adequate for all ordinary purposes. Large-size motors and other



IDEAL LAYOUT for farm electric distribution system planned for adequate wiring for:

RESIDENCE
60 Amp. 3-Wire Service provides for all ordinary uses, including:
Lighting, Radio, Water Pump, Washing Machine, Ironer, Refrigerator, Range, Water Heater, Stoker, Small Appliances

GARAGE AND SHOP
30 Amp. 3-Wire Service provides for all ordinary uses, including:
Lighting, Utility Motor, Soldering Iron, Power Saw

POULTRY HOUSE
30 Amp. 3-Wire Service provides:
Lighting, Water Warmers, Brooders, Ventilation

GRANARY
30 Amp. 3-Wire Service provides for all ordinary uses, including:
Lighting, Feed Grinder, Corn Sheller, Feed Mixer, Seed Cleaner, Grain Elevator

BARN
60 Amp. 3-Wire Service provides:
Lighting, Milking Machine, Ventilation, Utility Motor

MILK HOUSE
30 Amp. 3-Wire Service provides for all ordinary uses, including:
Lighting, Water Pump, Bottle Washer, Sterilizer, Milk Cooler, Water Heater, **Separator**, Butter Churn

STABLE
30 Amp. 3-Wire Service provides:
Lighting, Clippers

large-size power additions should never be made, however, without checking with the electric company, which will make the necessary provision for adequate power supply. The trouble comes when we get into the farmer's own wiring—over which the electric company has no control. With wires too small and with long runs, electric force is weakened; motors will heat up; speeds will be reduced; heating devices will not come up to temperature; lights will be dim and probably flicker; and turning on one piece of apparatus will affect the service to others.

When any doubt exists as to whether or not the wiring is adequate, the first three things to check are: (1) Is the service entrance large enough?—This is the first bottleneck. (2) Are the wiring circuits, in and between the buildings, of sufficient capacity? and, (3) Are there enough conveniently-located outlets?

Farm wiring is different from most other wiring because there are so many different sorts of buildings to be wired. The wiring in the farmhouse, barns, etc., should be adequate to provide current at the proper voltage for appliances, motors and lights now and in the future. Otherwise full use of electricity cannot be obtained and expensive re-wiring will be necessary. Adequate wiring means plenty of outlets, big enough wire sizes and a properly planned wiring layout. The following suggestions are made for wiring an average farm adequately:

To lay out the distribution system necessary, make a sketch or map of the farm buildings. Determine the light and power requirements (present and future) of each building and write this information down on your map. Measure the distances roughly between the buildings and write these figures on your map too.

Using this simple map as a guide you can decide two vitally important questions: Where to put the main switch, and what size to make the feeders to the various buildings. (1) The main switch should be located as centrally as possible (but not too far from the high line). If there isn't a building near this spot, erect a pole on which to place the main switch and meter. If there is a building, install the switch and meter in or on it. (2) The size of the feeders required can be determined by referring to your map to find out how big a load must be carried to each building. Feeders must be adequate to carry this load.

How to Install Properly

Wherever practical, separate feeders should be run to each building or at least to each group of buildings. This will make the load in any one building entirely independent of the loads in the other buildings. Better service will result and, later, the load in any one building can be increased without affecting the rest of the system.

Sometimes the center pole is used as a transformer pole also. The main feeder then would be short, running down the pole to the main switch and back up again to the splicing box. Whether the transformer is located here or on a more distant pole, voltage drop should be held to one per cent from the transformer to main switch. Also, voltage drop should be limited to one per cent from the main switch to the entrance equipment in each building.

To determine type and size of main switch, add together the total connected load of all the buildings. Determine

(Continued to page 87)

Farm Water Supply Pointers

How to modernize farm homes and farm buildings with pure water on tap

WHEN THE JAPS besieged Hong Kong, they aimed their artillery at the water mains. When the mains broke, there was nothing the English army could do but surrender.

From the American factory to the Libyan desert, everywhere water is a vital factor in strategy. This is particularly true in the important business of food production.

Running water is the modern tool for the farm. Water, more than any farm production machine, speeds crops to maturity and increases the yield of milk, eggs, meat and vegetables—goods so necessary to our fighting forces.

War demands more food production with less manpower from American agriculture. An electrically-operated water system will save as much as 30 ten-hour days or more per year.

By piping water to his hog lots and placing an automatic fountain in the division fence, Harry C. Hanson of Nicollet County, Minnesota, saved 40 minutes a day. The piping replaced a two-a-day trip by stone boat and barrel between well and the two hog lots.

Another Minnesota farmer, W. A. Benitt of Washington County, says: "Before we put in our water system, I used to spend about four weeks out of every year toting water to the buildings. Now I save that much time, and more. On a busy farm like ours, that saving has a cash value."

Benitt's farm, with 700 feet of water distribution pipe, is a fine example of how water helps in the "Food for Victory" program. Water is on tap in the poultry house, the barn, the cattle shed, and the hog lot; the turn of faucet brings water for poultry, hot water for thawing the tractor. A hot shower awaits Mr. Benitt when he comes in at night, grimy from a day's work.

When water is carried by hand there is seldom used more than 4 to 6 gallons per person per day. It is estimated that water usage increases to around 35 gallons per person per day with a completely modernized home, besides the amount consumed by livestock and for other farm uses. These have been estimated as shown in the accompanying table reproduced from the Tennessee Valley Authority Manual, "Pumps and Plumbing for the Farmstead."

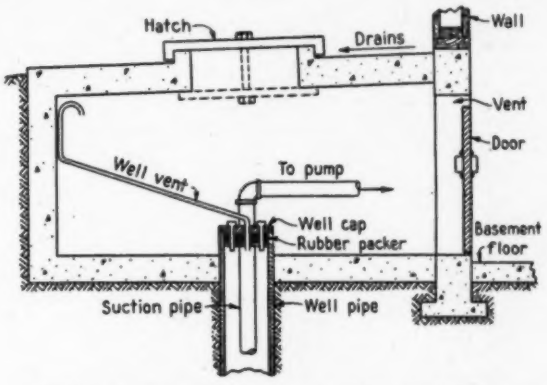
WATER CONSUMPTION—AVERAGES

For each member of family (total average daily consumption allowing for kitchen, bathroom, laundry and some sprinkling)	35 gallons a day
*For each cow	30 gallons a day
For each horse (winter, 4 to 8 gallons; summer, 8 to 18 gallons)	15 gallons a day
For each hog	2 gallons a day
For each sheep	1½ gallons a day
For each 100 chickens	2½ gallons a day
For sprinkling (½-inch hose)	200 gallons an hour
For sprinkling (¾-inch hose)	275-300 gallons an hour

(10 gallons will sprinkle 100 sq. ft.; 20 gallons will soak 100 sq. ft.)

*Statistics show that high producing cows sometimes drink as much as 35 to 40 gallons a day.

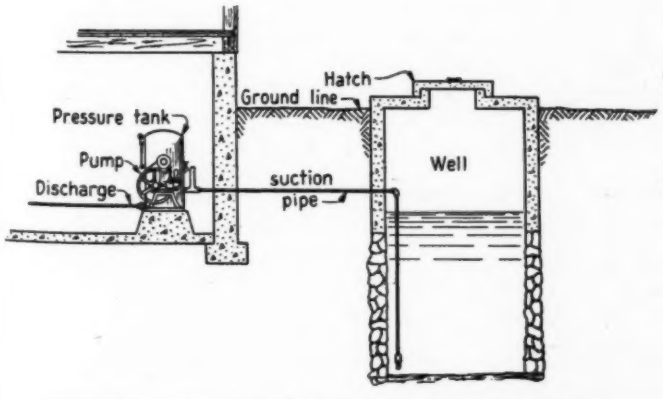
From this it can be seen that many farm wells and springs are inadequate to furnish any such supply, rendering useless an investment of money in an automatic pumping system, unless there is some source as a reserve. In many cases a new well or cistern is necessary.



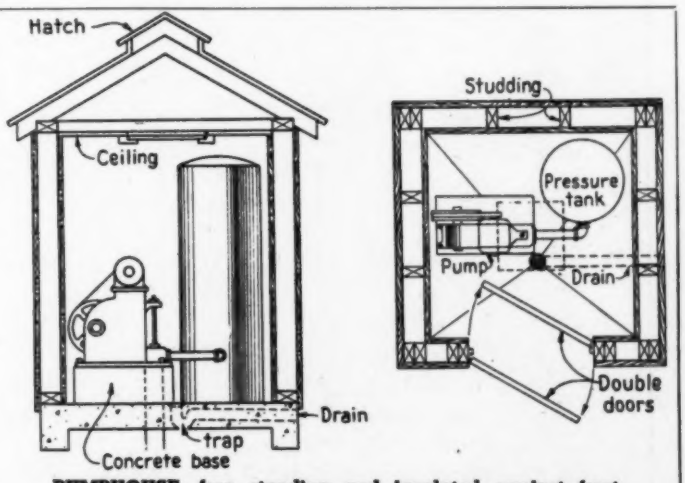
HOW to seal well pipe against contamination.

It is advisable when planning any farm water supply improvements to contact the local well driller, the health department, or any other agency that is qualified to

(Continued to page 82)



SHALLOW well pump installed in basement of farmhouse.



PUMPHOUSE, free standing and insulated against frost.

Sanitary Milk House

TO ASSURE production of clean, high quality milk, local and state health departments usually require a separate milk house used only for the handling of milk and milk utensils. It is always advisable to have the plans approved by local health authorities. The principal requirements found in modern milk ordinances are:

(1) The milk house shall be provided with a smooth, tight floor of concrete or other impervious material sloped ¼ in. in 1 ft. toward floor drains. The floor should be built to form a rounded joint or cove at the junction of floors and walls to eliminate corners and angles which collect dirt.

(2) Milk house walls and ceilings shall be of such construction as to permit easy cleaning. Walls of cast-in-place concrete, concrete block or tile and portland cement plaster are satisfactory when finished smooth.

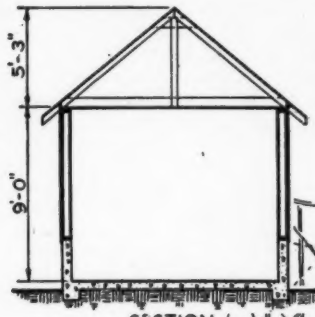
(3) The milk house shall be properly lighted and ventilated. Satisfactory compliance with most ordinances is provided by window area of not less than 10 per cent of the floor area. One 25-watt electric light per 100 sq. ft. of floor area is also often required.

Ventilation is obtained by installing windows of the tilt-in type together with either a small roof ventilator or ventilator louvers in the gable end wall.

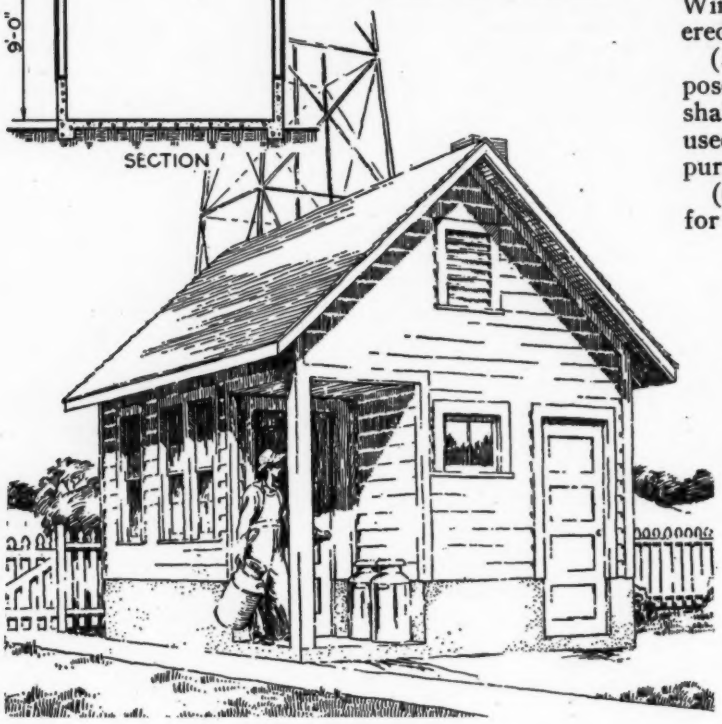
(4) The milk house shall be effectively screened. Windows, doors, ventilators, and all other openings covered with 16-mesh screening to prevent entrance of flies.

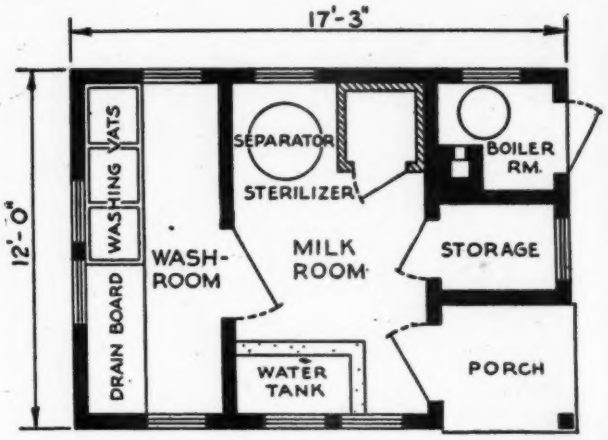
(5) The milk house shall be used for no other purpose than handling of milk and milk utensils, and it shall not open directly into a stable or into any room used for human sleeping quarters or other domestic purpose.

(6) The milk house shall be provided with facilities for heating water and cleaning milk utensils.

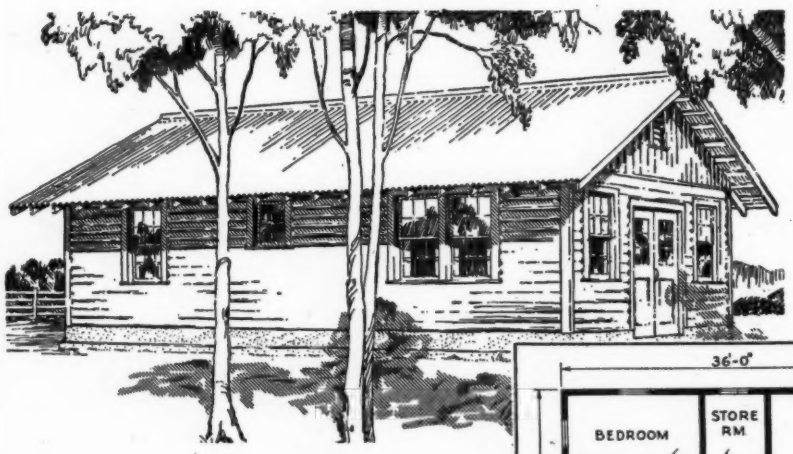


MILK HOUSE that meets sanitary regulations; cooling tank capacity for three 10-gallon cans; design by the U. S. Department of Agriculture.

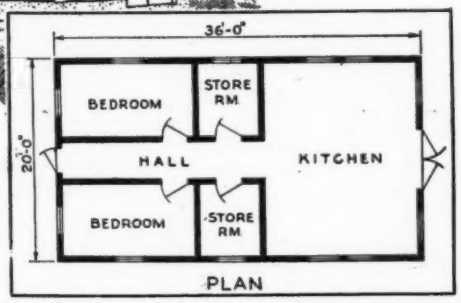




PLAN



4-H Club kitchen center as shown in plan and sketch above will be found useful in many areas during the harvest season.

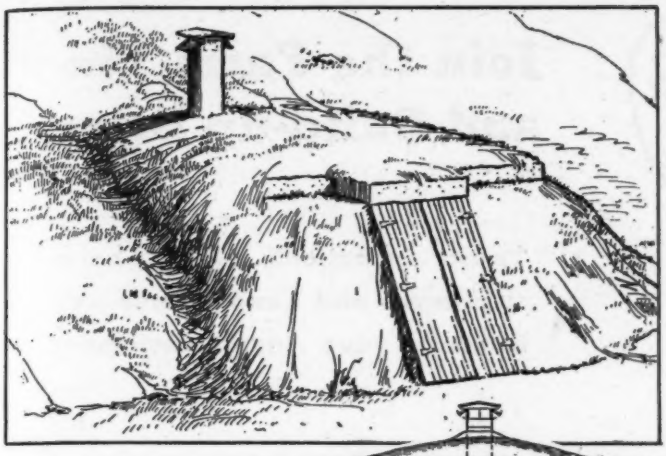


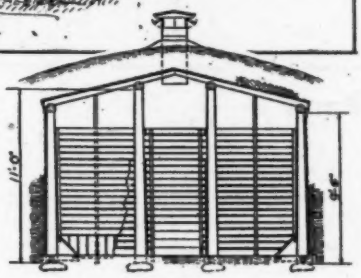
PLAN

Small Canning

THE SHORTAGE of all types of canned goods for civilian use is creating a big opportunity for small community canneries. Some ideas for suitable inexpensive buildings for such enterprises are presented here, these suggestions coming from the U. S. Department of Agriculture.

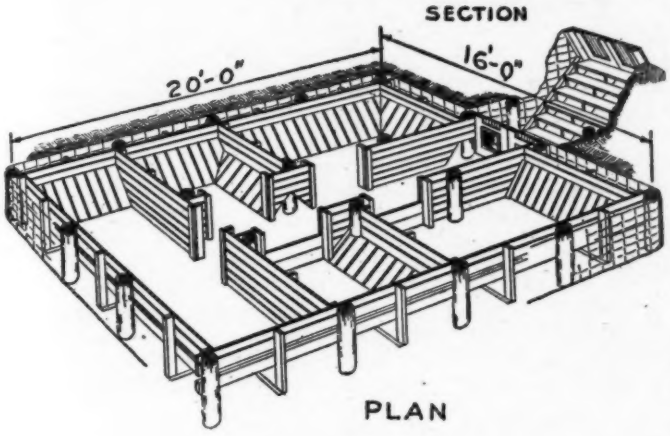
A 4-H Club kitchen is offered. This would be a local center for club canning operations or it would be a useful building in a 4-H Club camp. Space is ample for work tables, stove, sink, etc. Two large bedrooms provide sleeping space for help or occasional visitors when the full camp is not open. If cooking is





BANK STORAGE for potatoes and root crops; a sensible adjunct to the Victory garden.

SECTION



PLAN

PERSPECTIVE of horizontal section shows how root cellar space is divided into storage compartment with center passage to entrance.

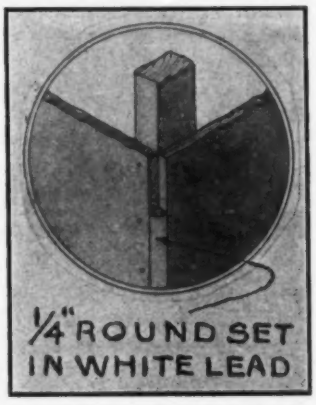
A Victory Root Cellar

LET'S HELP to save and preserve for use this year much of the garden truck and root crops usually permitted to spoil for lack of proper storage. The U. S. Department of Agriculture offers suggestions for a root cellar as illustrated to left. It advises as follows:

Where logs are plentiful and cash expenditures must be kept low, this type of side hill cellar construction, with local materials and labor, provides cheap storage. It may be built entirely below ground or partly above. The covering of straw and earth is good insulation. Air-circulation spaces back of the bin aid in cooling the cellar by night ventilation during warm periods.

Where a side hill site is not available the entire cellar has to be excavated and the earth walls retained from caving by laying up walls of concrete, brick, tile or treated timbers. In such cases the site selected must be dry and well drained. Access is had by means of a sloping bulkhead approach to a stout entrance door.

How to Finish a Plywood Corner

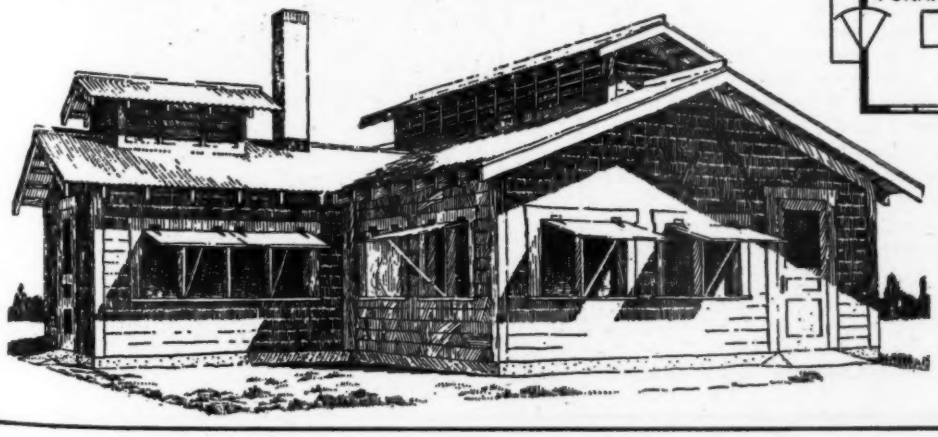


PLYWOOD and other panel-type building and finishing materials are much in use on the farm. How to make a neat, smooth corner where two sheets come together is easily answered if the accompanying detail is followed. A piece of ½-inch quarter-round exactly fills out the corner, covering the rough plywood edges, or the weak fibre board edges, and presents a strong, well rounded contour. For outside construction only waterproof glued plywood (exterior grade) should be used; and for this the corner pieces should be set in white lead or mastic and nailed in with small finishing nails. After setting, the corners should be thoroughly painted. This makes a much more durable and better looking corner than the more common lapped corner system, which leaves one row edge exposed.

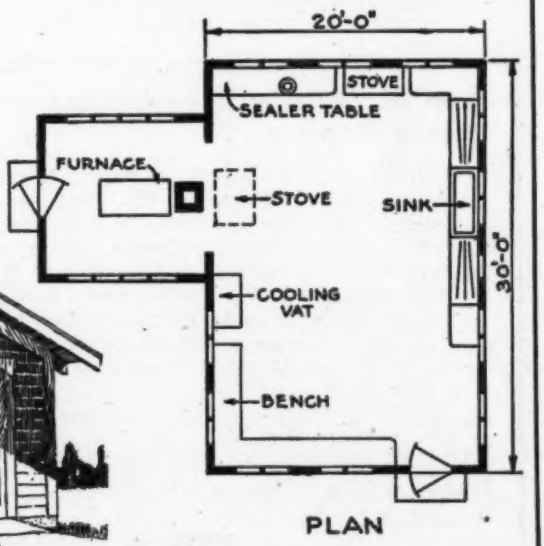
Plants Will Be Built

done for a large camp, sleeping and dining quarters must be provided elsewhere.

Also illustrated, below, is a business-like layout for a small canning plant. Stout wood window shutters close the openings during off-seasons, and provide shade when opened.



BELOW: Small canning plant for a local community.



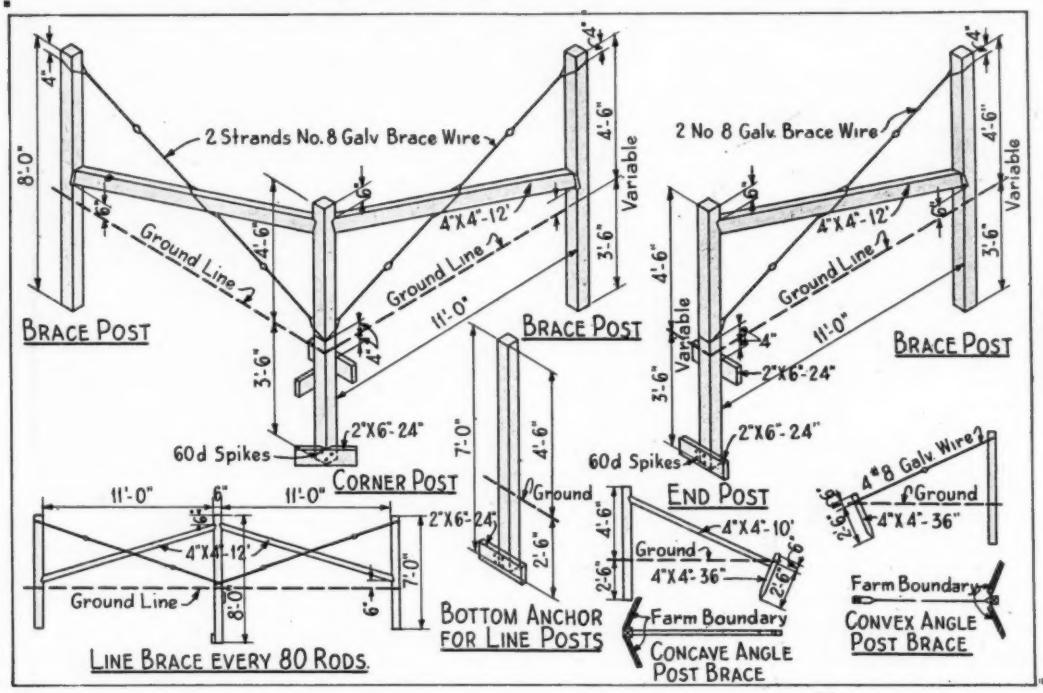
PLAN

Join the Farm Fix-up and Build-up Brigade

These practical small farm structures and handy kinks will interest your farm customers

How to Brace and Anchor Corner Fence Posts

GOOD FENCING is needed to control stock and rotate crops, and good fencing must have strong posts and well-braced corner posts. Max E. Cook, farmstead engineer for the California Redwood Assn., recommends the anchoring and bracing details shown. Bottom anchors should be used for posts located in swales or hollows. Sixteen feet is proper distance between fence posts. Keep size of holes as small as possible, and tamp posts thoroughly, keeping them plumb and in line. Dependent upon soil conditions posts should ordinarily be set about ⅓ in the ground, and tops uniform above ground.

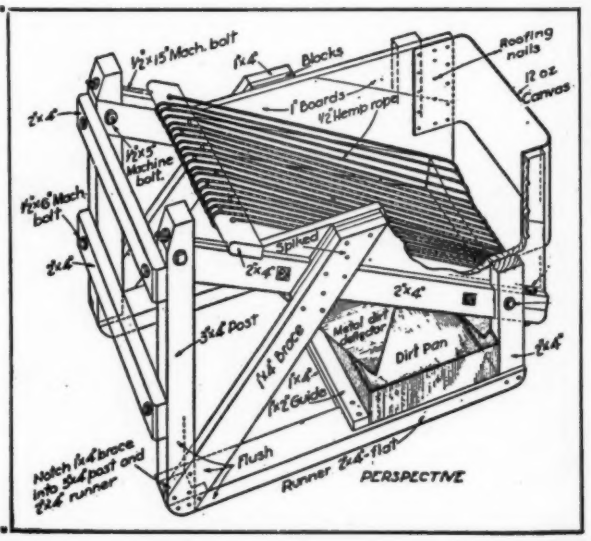


STRONG and durable fence post setting recommended by the California Redwood Association.

How to Build a Rope-Bottom Potato Hopper

POTATO GROWERS will want a dirt-trap like this to clean the tubers on the way to the bin. The rope bottom lets the dirt through and prevents bruising. Dimensions of this hopper are 26 inches wide over-all by 52 inches long; 26 inches high at the front, 33 inches at the back. One hundred feet of ½ inch rope is needed. The hopper frame is strongly made of 3 by 4's and 2 by 4's, bolted together and side-braced. The rope anchor bar and tension bar are of oak with ½ inch carriage bolts inserted to hold the rope screen in position.

The bill of material for this outfit calls for 1 pc. 3" x 4"—8'; 1 pc. 1" x 4"—14'; 3 pcs. 2" x 4"—12'; 1 pc. 1" x 8"—10'; 1 pc. 1" x 2"—2'. One half inch machine bolts are required in four sizes, 15", 6", 5" and 3"; carriage bolts are ½ x 3" and ½ x 4". Two brace rods, ⅜" x 37" threaded at both ends are also used for the stiffening of the rope sieve frame.

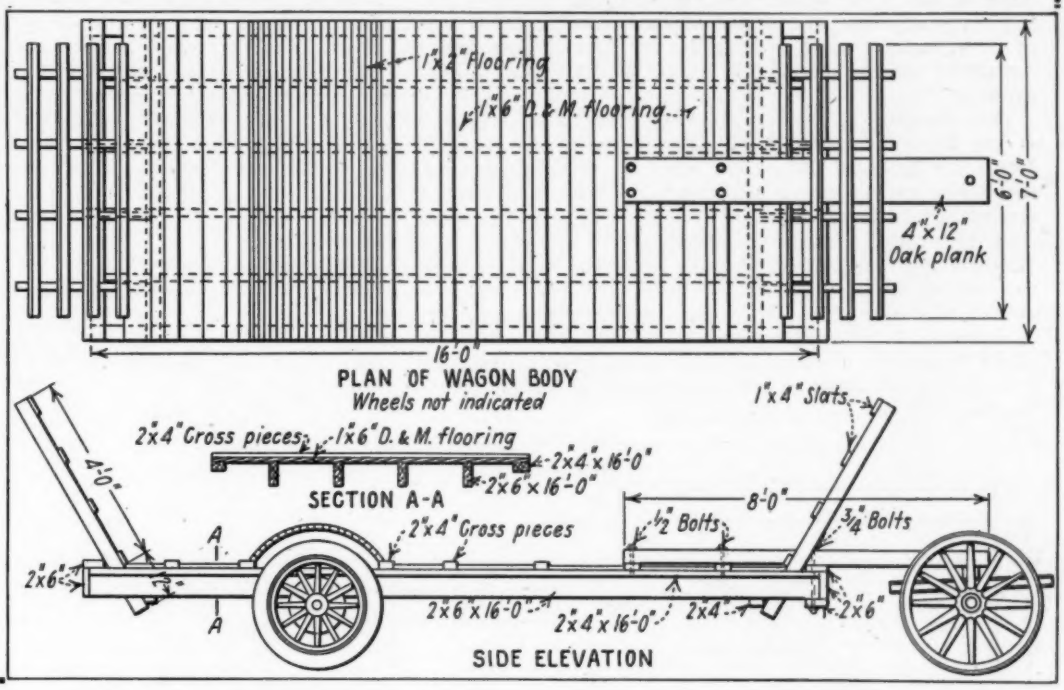


HOPPER for cleaning potatoes on way to bins.

How to Make a Low Farm Wagon

A LOWDOWN farm wagon is mighty handy; and a good low box and rack are easily made according to these detail drawings, prepared by the farm mechanics men of the U. S. Department of Agriculture. It makes a wagon bed 16 feet long by 7 feet wide with a further rack extension front and rear, particularly good for loading corn stalks.

The connection through to the front wheel bolster is a 4 by 12 inch plank, 8 feet long, carried back half its length above the wagon box frame and bolted to the frame cross members with ½-inch and ¾-inch bolts. The frame itself is made of 2 by 6's and 2 by 4's, while the flooring is of 1 by 6 dressed and matched stock, except for the curving section over the rear wheels, floored with 1 by 2 inch strips.



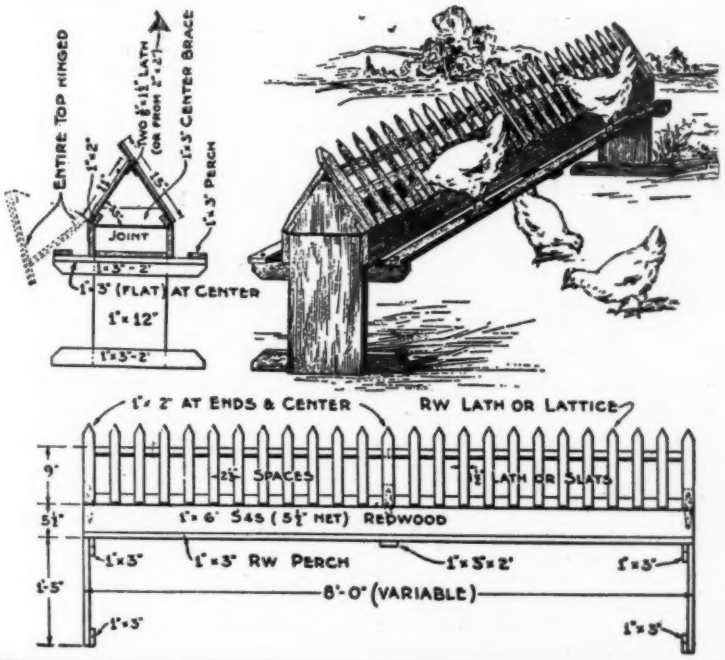
HANDY low rack for farm wagon.

How to Assemble a Poultry Self-Feeder

THE Benson type of poultry feeder popularized in California by F. A. Benson of Modesto has been detailed by the Agricultural Department of the Redwood Association. In the San Joaquin Valley, where hundreds of these redwood feeders are in successful use, it is known as a "3 in 1" because of its adaptability for feeding dry mash, damp mash, or fresh greens such as chopped hay. Lumber dealers have made them up in quantities, and have found them to be real sellers.

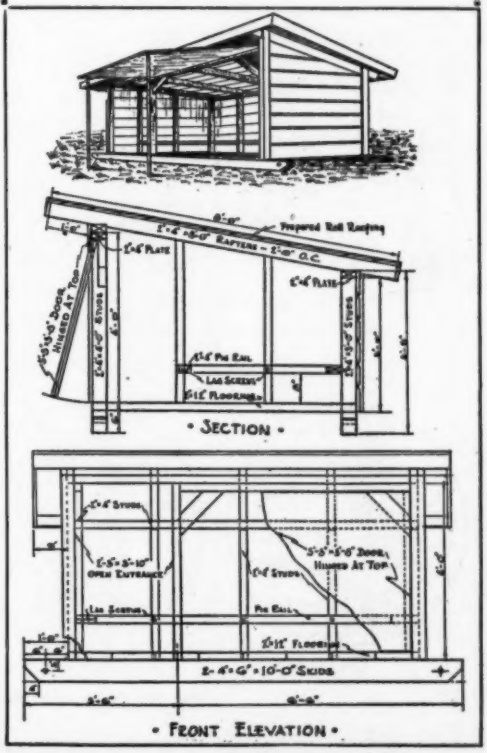
As shown in the drawing, the entire top is hinged for easy filling and cleaning, the picket top discourages roosting at that point while the 1 by 3 inch perch, free standing along each side, gives the birds just the proper access to the feed hopper slots without likelihood of soiling.

Any length needed can be built, though the 8-foot size pictured seems to suit most conditions.



How to Construct a Portable Hog House

THIS hog cot measures 8 by 10 feet and gives good shelter both in cold stormy weather, with side wall lowered, and in summer heat when the raised side acts as a sun shade. This design prepared by the U. S. Department of Agriculture is a safe one for lumber dealers to follow when making up hog lot equipment for their farm trade.



How to Brace Rafters for Barns of Three Different Heights

THE GAMBREL ROOF is the most popular in the dairy states of the upper Mississippi Valley, probably because of its good appearance, strength and stiffness, and large unobstructed hay mow capacity. Also it is a type of barn framing using nothing heavier than 2 inch plank —material usually carried in stock at the local lumber yard.

The drawing below, prepared by the farm engineers of the U. S. Department of Agriculture, shows approved details for barns of 34 and 36 feet; for the 36-foot width two styles are shown as to height, one with side framing carried up 5 feet above the mow floor and the other with the rafters springing directly from the floor line. Of these two, the first is generally preferred, since it gives more mow space (1.1 tons of loose hay per lined foot against .78 tons for the lower roof style) and also it makes a better proportioned roof. The gambrel slopes of all these roofs are kept 12 to 7 for the lower rafters and 7 to 12 for the upper, which it is commonly agreed give a pleasing roof line.

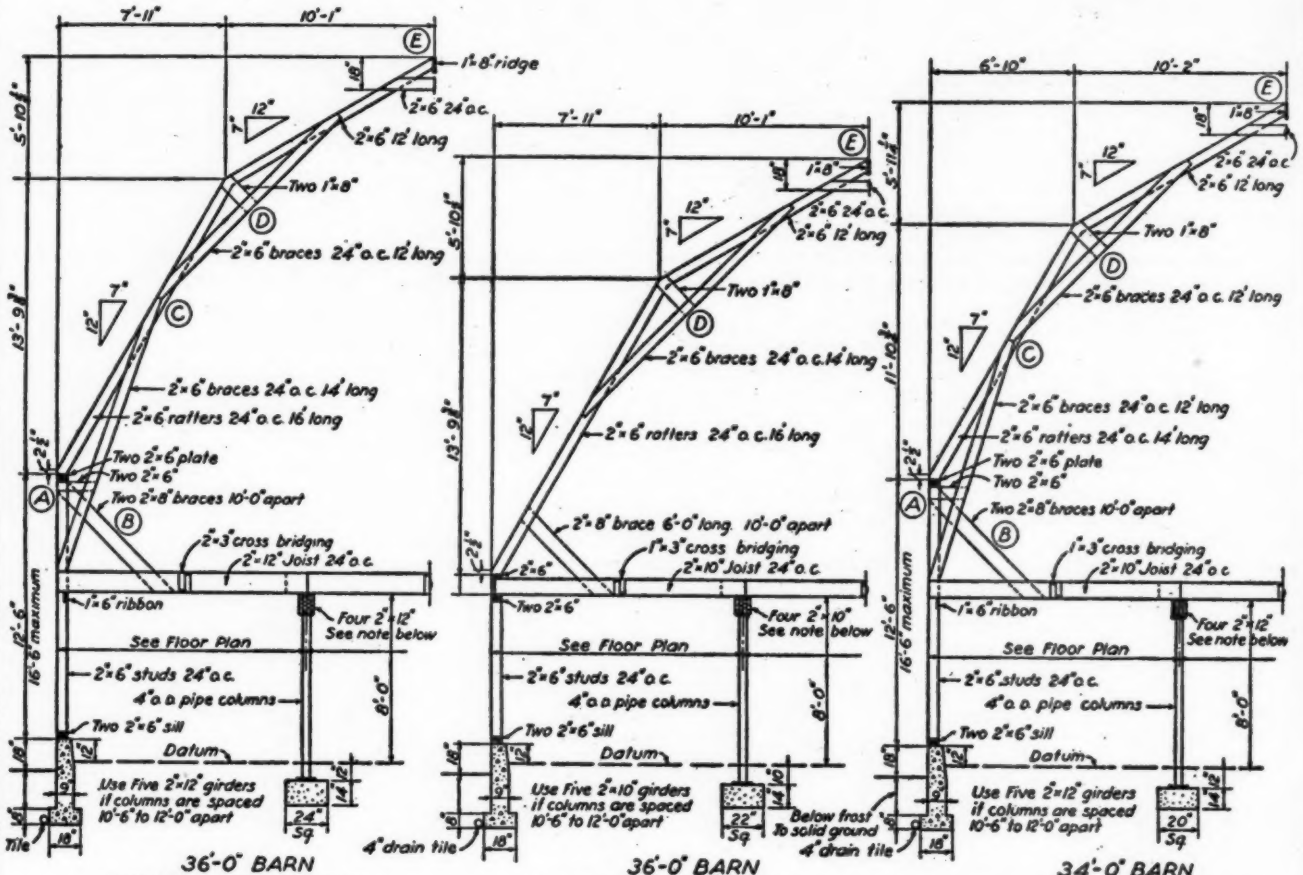
The roofs shown in these details are known as "braced rafter" roofs, being made up of a series of rafters on 24 inch centers, each one braced to form a small truss. This system is in contrast to the "plank frame truss" type which calls for much heavier trusses on 12 foot centers with unbraced rafter construction in between. These braced rafters are lighter and easier to handle and do not require special hoisting apparatus in their erection.

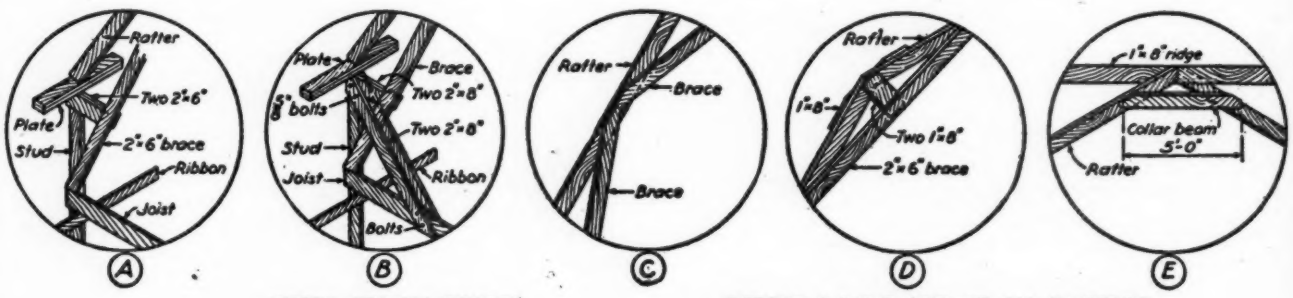
The rafters themselves are 2 by 6's with truss braces nailed on of the same dimensions. The knee bracing from the floor joists up to the plate are stronger, being formed of two 2 by 8's. These braces are spaced 10 feet apart down the length of the barn.

The accompanying drawings carry notations giving the loose hay capacity of these mows for the widths shown.

NOTE:

Nail 2" x 6" braces to studs and rafters with 16d nails. Toe-nail studs to sills, and rafters to plates with 16d nails. Bolt 2" x 8" sidewall braces with 5/8" bolts (see Detail B).


7'-11"
10'-1"
1"x8" ridge
2"x6" 24" o.c.
2"x6" 12' long
Two 1"x8"
2"x6" braces 24" o.c. 12' long
2"x6" braces 24" o.c. 14' long
2"x6" rafters 24" o.c. 16' long
Two 2"x6" plate
Two 2"x6"
Two 2"x8" braces 10'-0" apart
2"x3" cross bridging
2"x12" Joist 24" o.c.
1"x6" ribbon
Four 2"x12" See note below
See Floor Plan
2"x6" studs 24" o.c.
4" o.d. pipe columns
Two 2"x6" sill
Datum
Use Five 2"x12" girders if columns are spaced 10'-6" to 12'-0" apart
Tile
36'-0" BARN
Loose hay 1.1 tons per lineal foot
2"x8" brace 6'-0" long, 10'-0" apart
1"x3" cross bridging
2"x10" Joist 24" o.c.
Four 2"x10" See note below
Use Five 2"x10" girders if columns are spaced 10'-6" to 12'-0" apart
4" drain tile
36'-0" BARN
Loose hay .78 tons per lineal foot
6'-10"
10'-2"
2"x6" rafters 24" o.c. 14' long
Below frost To solid ground
34'-0" BARN
Loose hay .95 tons per lineal foot

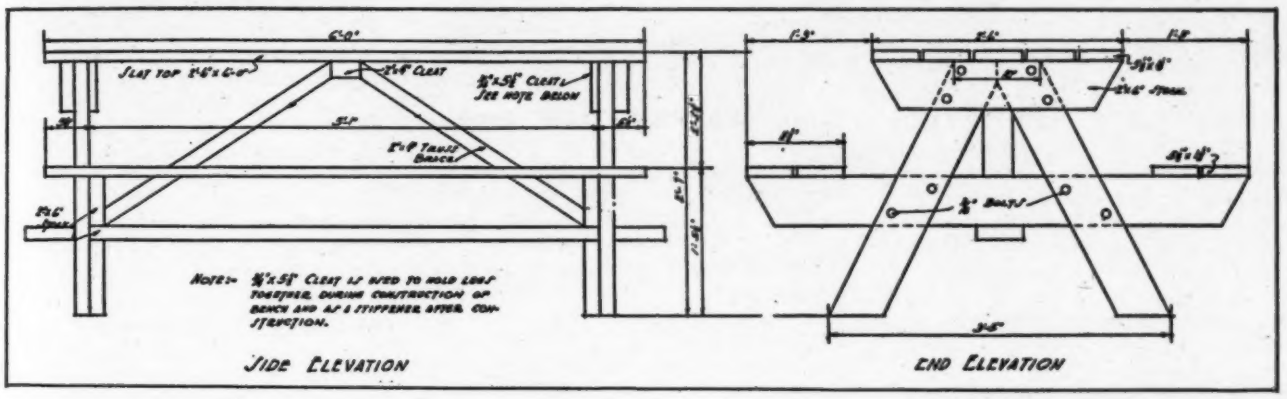


How to Put Together an Outdoor Picnic Table

A STRONG picnic table is built of 2 by 6's for the legs and cross pieces and 2 by 4's for the braces; the table top and seats are of dressed 5½ by 1⅛-inch stock, set ½ inch apart for drainage. Bolts are used to fasten the frame together, making a strong durable construction.

The proper table height is 2'-7", seat height 1'-5½". The table top size recommended is 2'-6" by 6 feet. The slanting legs extend out to give a non-tipping base 3'-5" wide.

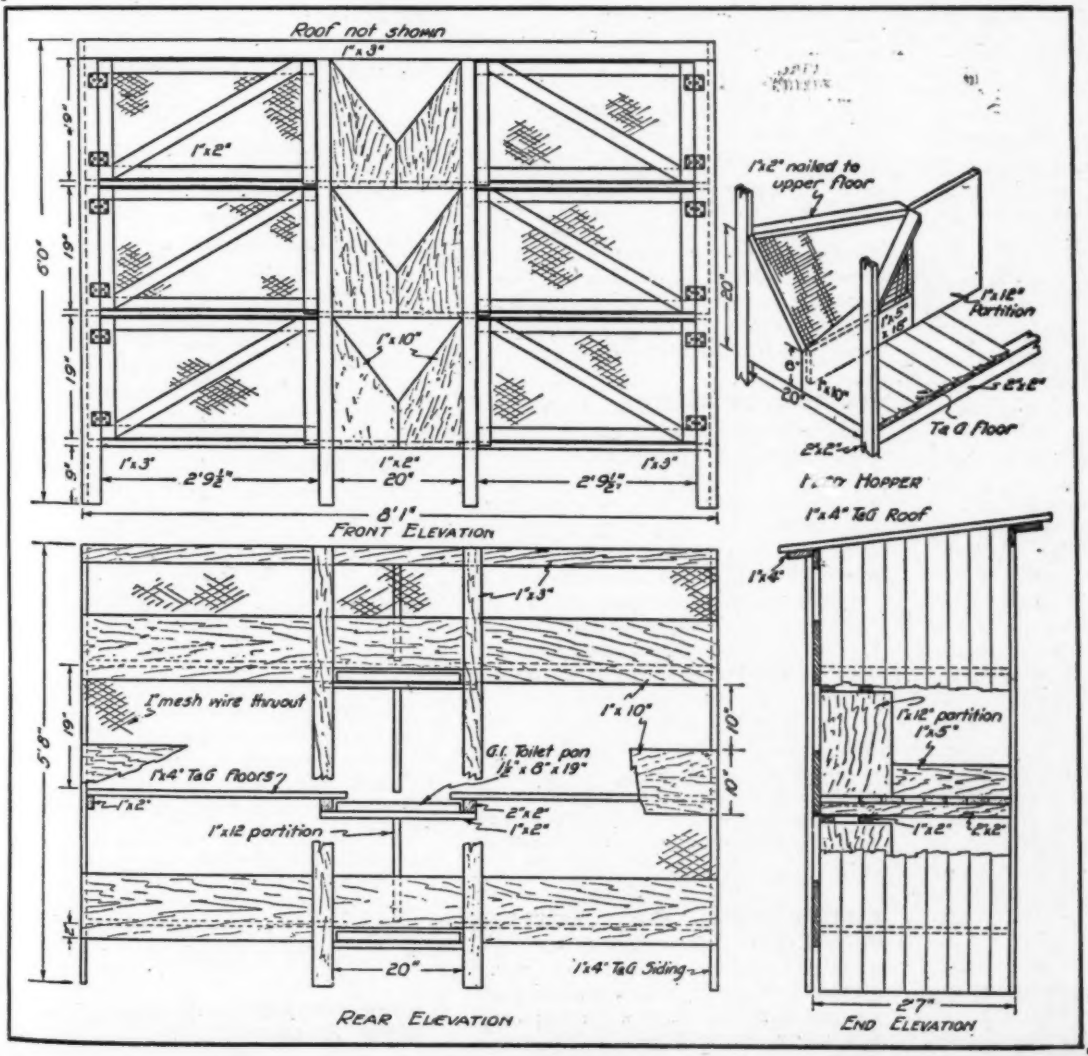
This makes a good farmyard work table and hot weather dining table out under the trees.



How to Design and Build a California Rabbit Hutch

RABBIT RAISING for meat has taken a big wartime spurt, and good rabbit hutches are necessary for success. The drawings show the 3-tier hutch recommended by the Poultry Husbandry Division of the California College of Agriculture. In this the feeding, watering and cleaning devices are arranged to require the least amount of labor. It has a V-shaped central feeder. Beneath the toilet, at the rear, is a shallow galvanized iron pan which slips out for cleaning.

Solid wood floors are provided here, since, although slatted and wire-covered floors are used extensively in rabbitries because they are self-cleaning, most trouble with sore hocks has resulted from such floors; furthermore they are often drafty, and as a matter of fact slatted floors with a pan beneath are often left filthy. Solid floors with the toilet at the rear can be made self-cleaning, will be easier on the rabbit's feet and less drafty, and in ordinary practice will probably be kept more sanitary.



3-TIER rabbit hutch popular in the West.

War Housing Items from the CAPITAL

By Frank W. Cortright

Executive Vice-President, National Association of Home Builders of the United States

AMENDMENTS APPROVED. Here are those long promised, much disputed amendments to NHA General Orders 60-2 and 60-3. One of the most important amendments, the "security deposit," was not included in this group as there has been some conflict of opinion in WPB as to permitting the acceptance of the security deposit.

ONE-THIRD SALE PROVISION. Requirement that all privately financed war housing commenced on or after February 10, 1943, be held for 4 months' rental occupancy before it can be sold to the war worker occupant, at the option of the occupant, is modified as follows:

1. The 4 months' rental requirement is reduced to 2 months.

2. An owner, without observing the 2 months' rental requirement, may hold for sale and sell not more than one-third of the aggregate of the units in all projects begun on or after February 10, 1943, which he has placed under actual construction in any war housing area. Such sales under this "one-third sale" provision shall not be subject to the 2 months' rental requirement, but shall be subject to the following:

(a) Any such sale shall take place not later than 15 days after the Federal Housing Administration makes its final Priority Compliance Inspection Report with respect to the unit. If the unit is not sold within that time it shall be held subject to the 2 months' rental requirement; and

(b) Any sale made under this "one-third sale" provision shall be within a price range for the general types of units intended to be sold which is acceptable to the National Housing Agency. This proposed price range shall be submitted to the Federal Housing Administration in advance of sale (by letter or other appropriate method). In the case of all PD-105 applications filed on or after August 1, 1943, this shall be submitted with the application.

Of course, any sale, either under the "one-third sale" provision or after 2 months' rental occupancy, shall continue to be subject to the conditions in NHA General Order 60-3, to the effect that the sales price is not in excess of the fair market price or $6,000, whichever is lower; that the purchaser is an eligible inmigrant civilian war worker; and that the owner submits to the local office of the Federal Housing Administration the customary report subsequent to sale (Form NHA 60-1).

WAR WORKER CAN BUILD HOME. To facilitate initial home ownership in special cases under appropriate safeguards, the amendments permit an eligible inmigrant civilian war worker to file an application for priority assistance for a private war housing unit suitable to his needs, and upon approval of such application by the Federal Housing Administration to build, own, and occupy such unit without conformity to the 2 months' rental requirement. However, in order to obtain such approval, the war worker must submit satisfactory evidence to the FHA that he has the bona fide intention and capacity to build for himself and is not being utilized to circumvent the rental requirements.

HOUSING STARTED BEFORE FEB. 10. Under the current amendments, the purchaser may be an occupant of 12 months' duration who is either an eligible inmigrant civilian war worker under the provisions of NHA General Order 60-1 or an eligible war worker under the provisions of the application for priority assistance or authority to begin construction submitted in connection with such housing. This means that a war worker who is properly renting a unit commenced prior to February 10, in the sense that he is an eligible war worker, may purchase that unit after 2 months' rental occupancy, even if he is not an inmigrant.

REVIEW OF RENTS. Under NHA General Order 60-3, the National Housing Agency Regional Representative has been authorized, prior to initial occupancy of privately financed war housing units, to approve increases in rentals above those approved in connection with the priority application, in those cases where "the owner has incurred, or will incur, costs in the construction of such housing, over which the owner had or has no control, in excess of the costs estimated originally in connection with such housing." Present amendments enlarge this discretion to grant relief to cover also those cases where the increases have been, or will be, in costs of operation as distinguished from construction.

LIMITATIONS ON RENTALS MODIFIED. The rule has been that rentals in privately financed war housing units "shall in no event exceed $50 per month shelter rent per unfurnished dwelling unit plus a reasonable charge for tenant services (in no event, exceeding $3 per month per room)." This rule is modified by the amendments so as to permit, in addition to the foregoing, a reasonable charge for garage space, plus the actual cost on a prorata basis of tenant gas and electricity.

APPLICATIONS PRIOR TO FEB. 10. Current amendments provide that "private war housing for which applications for priority assistance were filed with the Federal Housing Administration before February 10, 1943, but for which quotas did not become available until on or after that date, shall not be approved after July 1, 1943, except subject to the rules applicable to private war housing so "begun" on or after February 10, 1943."

SECURITY DEPOSIT SNAG. The "security deposit" amendment fate depends on agreement between NHA and OPA. The point of difference between the two agencies seems at present to be with regard to the wording of the amendment proposed by NHA. OPA takes the position that the amendment, as now worded, might in effect open a "back door" for general violation of its rent control program. The responsibility now rests with NHA to rewrite the amendment in such a way as to effectuate the desired relief for builders without conflicting with present OPA regulations.

WAR WORKER "UNKNOWN." The inmigrant war worker tenant is an unknown quantity"—with no local rental history. While many of these workers are of a high type and make satisfactory tenants, in prewar years it was a general practice to collect the first and last months' rent in advance on the signing of the lease to secure the proper use of the premises. There seems no good reason to penalize the builder of war housing by prohibiting his use of this normal safeguard. We fail to see where this violates the principle of rent control.

FHA SHIFT. Increased responsibilities in the FHA have been assigned to Deputy Commissioner, Earl S. Draper, according to an announcement by Commissioner Abner H. Ferguson. It is revealed that Mr. Draper who has supervised and directed FHA war housing operations and postwar planning since August 1942 will also take over the duties and responsibilities formerly assigned to Raymond T. Cahill who has recently resigned as First Assistant Commissioner. Mr. Cahill has been appointed Savings Bank Supervisor to Leo T. Crowley, Chairman of the Federal Deposit Insurance Corporation. Mr. Draper has been particularly helpful in understanding the problems of the builders and in helping smooth out kinks in the war housing program.

SITE TRANSFER OF PRIORITIES NOW ALLOWED. Under PR-208

(Continued to page 60)

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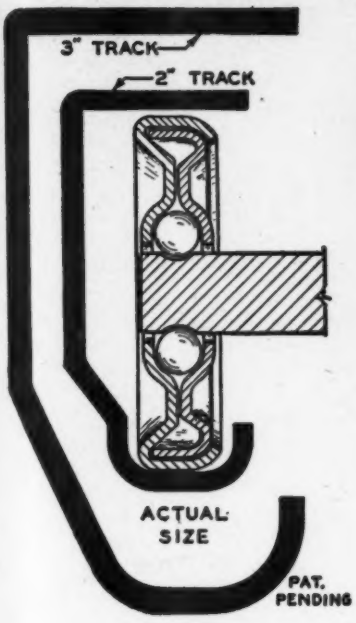

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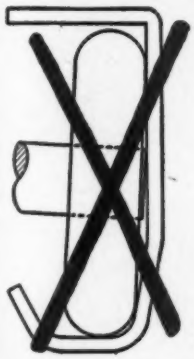

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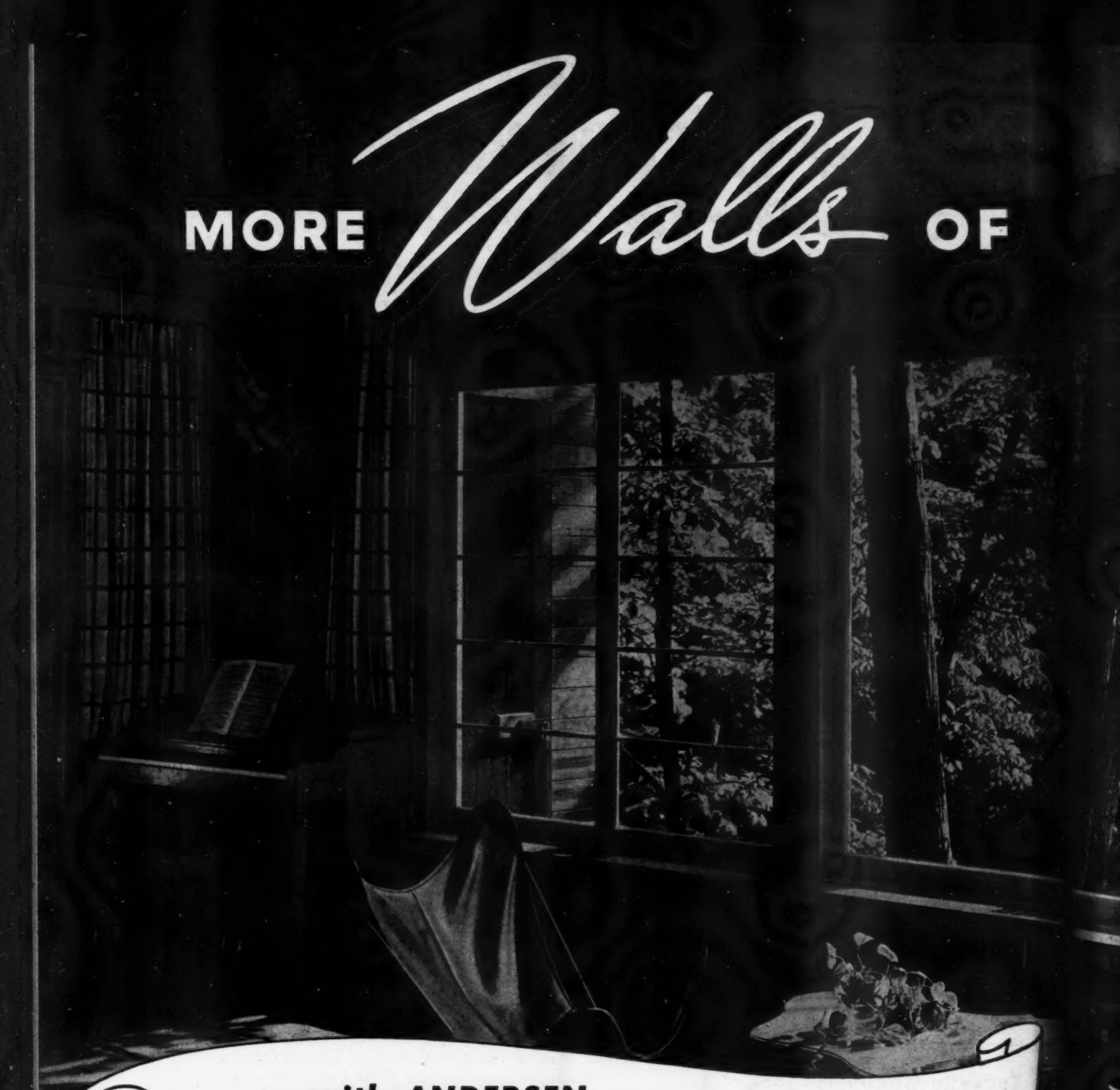

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War Housing Items—

(Continued from page 56)

recently issued to the field, FHA will now recommend for approval amendments to PD-105's permitting changes in locations of projects after the issuance of P-55 orders, where:

1. Proposed project complies with the provisions of Section 3 of NHA General Order 60-6;
2. Proposed change does not increase the quantities of critical materials;
3. Proposed site is in a locality subject to the same quota, serves the same war activity, and is equally convenient to that war activity;
4. Construction of the project is to be started within 30 days from the date of authorization of the requested change of location; and
5. No change of ownership of the proposed project is involved.

HOW TO REQUEST AMENDMENT. Requests for amendments of PD-105's to effect changes in locations should be made in the form of a letter to the local FHA Office, in triplicate, and should give the following information:

(a) Serial number of the PD-105 application and P-55 Orders.

(b) Date of issuance of the P-55 Order and its expiration date.

(c) Complete description of the proposed new location, specifically identifying the accommodations in the project which are affected by the change.

(d) Date on which construction of the project is to be started.

(e) All pertinent facts and reasons for the request in sufficient detail to permit a conclusive analysis of the merits of the request.

These requests must be accompanied by an amended PD-545 application or UF-26 certification, for the new location, covering each required utility extension, or a statement from the utility company that such extension can be made within the provisions of the outstanding utility authorization.

If the change of location results in fewer accommodations than originally approved, a certificate of surrender must be submitted on the units not to be constructed.

Where the proposed change of location will affect the kinds or quantities of critical materials already approved, the request must be accompanied by an application to amend the "Material List" or "Bill of Materials."

FHA. vs. LOCAL BUILDING CODES. Of considerable interest to builders throughout the country is the recent ruling of the U. S. District Court in Philadelphia that FHA need not comply with local building codes.

TENANT SERVICES TO BE DEFINED. NHA is now preparing a definition of "tenant services" for which charge may be made. While these services will no doubt be substantially the same as those previously approved by WPB, there will be some changes. From the many inquiries received it is evident that builders are now uncertain as to what they may include under "tenant services" and are anxious to have these clearly defined.

★ ★ ★

FHA Pays Its Way

(Continued from page 32)

include what might be called the period of development. Any new business of the same age would be proud to equal this performance.

Then think of the remarkable job FHA has done for the home owners—the lumber dealers—and the contractors of America. Few activities of the Government made so definite a contribution to the rehabilitation of business in the depression years, as evidenced by the fact that mortgage and loan insurance placed on FHA books within the nine years of its existence reached the astronomical figure of $6,400,000,000 in connection with nearly 5,200,000 individual loans. This meant that amount of private capital invested in new building, modernization and repair—home ownership—was insured by FHA.

No one can deny that FHA thus came to the relief of American industry in the low years following

(Continued to page 62)

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(Continued from page 60)

1933. In 1934, according to F. W. Dodge Corp. reports, the building of one and two family houses dropped to approximately $185,000,000 compared with $1,413,000,000 in 1928 and $1,154,000,000 in 1940. Much of this home building would not have been undertaken if the services of FHA had not been available. Those services acted as a creative as well as a stabilizing influence in promoting residential building. Thousands of lumber yards and contractors were enabled to remain in business while hundreds of thousands of families gained homes that offered higher standards of living.

That last statement almost cries for emphatic thought. FHA was responsible for a lowering of interest rates on mortgages. It helped to eliminate the obnoxious "2d and 3d" mortgages. It helped to outlaw the dishonest "jerry-built" house. It checked excessive finance charges.

Even more important, the specialized departments of FHA have always done much to give the home owner added value for his building dollar—as they are now doing.

Adequate specifications for actual use or application are prepared. Blueprints are carefully examined before building begins. Proposed costs are reviewed. Construction is constantly inspected to see that it conforms with plans and specifications. Appraisals are conservatively made upon definite principles of valuation that loss may be later averted.

These are just a few of the special services that FHA offers. They have resulted in a reduction of home building costs—have elevated standards of construction—and have given Americans better homes for their dollar of investment.

If the predictions are true that we need from 900,000 to 1,500,000 homes each year for a decade after the war, then here is a Government activity that should receive enthusiastic encouragement. It is one agency that should be free from partisan activities of any kind because of the tangible benefits accruing to the public.

Post-War Need for FHA

It is said that more than 80% of the homes to be built after the war will be in the lower cost brackets. Every thinking man will agree that it will be better for the nation if this housing is provided by private enterprise rather than under Government financing and direction. The services offered by FHA will be a powerful factor in encouraging the construction of these needed homes by private enterprise—the best protection the nation can obtain against Communism, Fascism, or any other "ism" because a home owner invariably becomes a conservative citizen.

The need for FHA is definite. It can become an outstanding force in the stabilization of business after the war. It can continue to offer an exclusive service to the people of the United States in providing low cost homes built to definite standards that will, in turn, raise the living standards of our citizens. Most important of all, increased activity on the part of FHA should mean a continuance of private capital in home building, as contrasted with the use of public funds for the construction of public projects subject to the whims or caprices of politics.

* * *

Danger in U. S. Control

(Continued from page 33)

actual subsidy paid out to help persons acquire home ownership.

Furthermore, the FHA has not as yet been tested in a depression period to find out whether or not its reserves are adequate, for the risks it takes, to absorb possible losses.

The building industry should stop, look and listen before it invites or urges the government to take part in any phase of the building industry, *of which financing is a part.* If home owners are subsidized through FHA operation it can be argued by some that those not as economically well off should also be subsidized by public housing, since each asked only for government money.

There seems to be some popular misconception about money and interest

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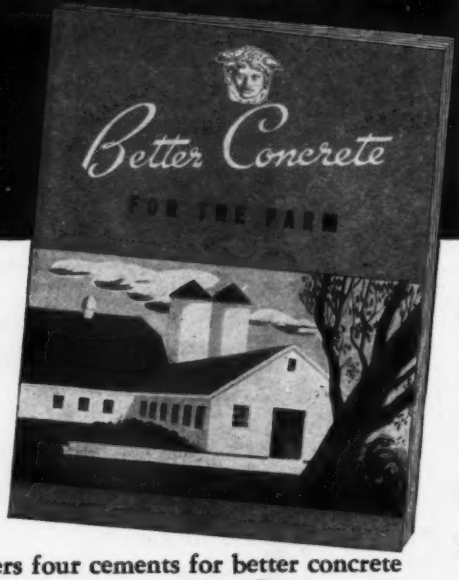

The illustration at the right shows the new Medusa Farm Book. This book contains a wealth of information on concrete farm construction.

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rates. The business of lending money has its cost of production, its cost of sales and its overhead expense just as has any other business. Its cost of production is the interest which must be paid to persons in order to induce them to loan their money. The persons affected are the millions of policy holders in insurance companies, and the small savers in savings and loan associations, mutual savings banks, and commercial banks. If the interest rates paid on savings drop to a point where savers have no inducement to save, then there will be no capital available for mortgage lending or any other purpose.

Financial firms have their costs of sales to acquaint people with how they do business. This cost has not changed much over a long period of years, nor has the cost of overhead, which includes the setting up of reserves to absorb the losses which are inherent in the business of taking risks.

In a ten-year period the costs of producing money have dropped considerably, so that people now are saving money even though it returns them only 2 to 3% whereas before they asked and got 6%. As a result it is possible for lending institutions today to offer to make some loans which will cost the borrower as little as 4%.

Interest Rates Are Economic

The rate of interest charged by mortgage lenders is not something that they pick out of a hat, but is a figure which is basic in its economic considerations. There is a floor below which interest rate cannot drop, depending upon what rate of return persons demand for their money. In the building industry it must always be remembered that no private institution can buy money *as cheaply as our government.*

There are those in the building industry who don't care whether mortgage financing money is made available by the government or by private lending institutions such as savings and loan associations, life insurance companies and banks. They only know that monthly payments on a $5,000 loan are lower if the term is 25 years than if the term is only 15 years, and that similarly the payment is lower if the interest rate is 4% rather than 6%. They are only interested in having funds available to pay them *in full* including their profit, and the devil take the mortgage lender who has the 25 year gamble to take.

Instead of trying to produce a house which costs less, wherein their profit will be less, they propose that the many persons who have saved their money with the mortgage lender should take less profit and greater risks, so that the builder can continue to build as he has, and not effect any economies or reductions in his profit. Money is just as entitled to a return for its use as is a laborer for his time or a dealer for his service.

It is time to look at all mutual problems realistically among the various factors of the building industry. While there have been more improvements in financing facilities than there have been in any other segment of the building industry, there are still some which can be made and which the savings and loan associations for one are attempting to instigate. There should be lower initial loan costs which have to do with fundamental mortgage laws and established business practices.

In some cities a $3,000 loan will only cost $7.50 to put on the books, and in other cities the cost is as high as $75. Changes in mortgage laws also will eliminate some of the costs of mortgage lenders doing business, which savings could be passed on to the borrower. Savings and loans association recognize that in a long term mortgage contract there should be greater flexibility of repayment because of the business cycles which affect every individual.

Out of every 100 loans that are made some are going to go bad, but the proportion should be kept low enough so that the mortgage structure will not disintegrate as it did in 1932. The longer the loan term, and the higher the percent of the loan to

(Continued to page 64)

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(Continued from page 63)
value, the greater the risk and theoretically the greater the cost of the loan to the borrower.

We cannot ask the government to make good our mistakes in the future. Since builders and material dealers are the ones who realize their profit as soon as the home is completed and the contract price paid by the home owner and the mortgage lender, these two elements in the building industry should be willing to leave a portion of their profit with the lending institution to help guarantee that the high percentage loan made to the borrower will be paid down to a safe level. This system flourished in England prior to the war and will be an important function in the post war building program of that country. In order that such a system could be workable, those who build must be better capitalized, and possibly material dealers will need longer term financing from the manufacturers.

There should be no dodging of the issue on the part of building supply manufacturers, dealers, contractors and labor groups for the things which they can do to produce more houses for less money. Government agencies should not be needed to endorse products or to regulate building, land subdivision or financing. As a matter of fact any superimposed government agency will only cost money, which expense will have to be paid by someone, probably the borrower, and if any government agency is advocated because it will eliminate some of the costs of any factor in the building industry it must be clearly remembered that those costs which are shifted to the government will be a subsidy which is not a part of the free enterprise system.

It is said by many that private enterprise will get its last opportunity to prove that it is equipped to do a complete job after this war is won. It behooves each factor of the building industry therefore, to broaden its sights so as to make the building industry once again a completely unfettered virile business, which can make improvements and pass them on to the public, without government pressure or regulation.

* * *

Wanted—Thousands of Farm Builders

(Continued from page 29)
science behind the feeding of cattle and poultry. There is no reason why the same could not be done for builders who are interested in knowing more about the principals of management and engineering behind farm building design and construction. It requires only an organized demand. And the County Agent is the point of contact for making the demand felt. It is probably true that if enough builders and dealers would indicate an interest in a school of farm building design, and make that interest known to their County Agricultural Agents or the State Director of Extension at the State College of Agriculture through their own associations, quick and effective action would be taken.

Therefore to all rural builders and contractors who want to expand their business on a sound basis in this comparatively new field I would say "Learn what the building problems are of the farmers within range of your activities, inform yourselves on the proper methods and techniques for handling them, keep up to date on new materials and their uses through the literature of the manufacturers, and then diplomatically let your prospective farm clients know that you have a service for them which will relieve them of unfamiliar tasks and allow them more time for profitable production." The generally accepted idea that farmers can and will do their own building is no longer valid except for minor repair items—and even in this field farmers are going to be forced to depend on outside help much more than in the past. This fact has been demonstrated forcibly in recent years.

For example, demands for increased production of poultry and pork have required the use of many small moveable buildings such as brooder houses, range shelters and farrowing houses. Formerly farmers would have ordered a small jag of lumber and built them on

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the farm. Now dealers and builders are prefabricating them and selling them completely erected, ready for use. Farmers are finding it profitable to buy rather than to use their own time to build. They are finding, too, in most instances, that they are getting higher quality structures than they could make themselves.

The following experience of the Farm Security Administration well shows that farmers should *farm*, and builders *build*. This agency, has been making loans for the past six or seven years to finance the purchase of farms and to do whatever construction work might be needed to put the buildings in good operating condition or to erect new ones where needed. In some areas, as throughout the South and Southeast most of the construction work is now done by the contract method though in the beginning the borrowers undertook to do it themselves. In other areas the old traditional method is still in force. At the conclusion of a five-year period ending June 30, 1942, an analysis was made of operations in the eleven northeast states to find out just how well this "good old-fashioned way" was working out.

Each borrower had wide latitude in the administration of his loan funds. When he obtained it he was asked to state how he proposed to get the work done, whether by contract, by hired labor, or by the use of his own labor. Out of over 1000 borrowers more than 97% stated they wished to do the work themselves or to hire whatever additional help they might need. A very small percentage chose the contract method. The big majority thought they saw an opportunity to save some money by earning the contractors fee for themselves. Their intentions were the best. But what were the results?

At the end of the five-year period almost ten percent of those who had borrowed during the first year still had unexpended construction loan money in the bank. Of the second year borrowers, approximately 30% had not completed their work. Of the third year borrowers, 70% had not completed, and only an insignificant number of the fourth and fifth year borrowers had finished the construction they had planned.

The over-all average time to complete was something over four years. The simple fact was that these farmers were so very busy looking after their many productive enterprises that they just did not have time to perform as contractors and builders.

If farmers have a heavier job to do to meet their wartime responsibilities it follows that they will need additional building facilities to implement their efforts. If they have this heavier job to do with less labor and mechanical equipment, it follows that they will have even less time than heretofore to do construction work. Inevitably they will be obliged to call upon the building industry to fill the gap. It looks very much, therefore, as though rural builders, contractors and lumber dealers are going to be elected.

RUB-A-DUB-DUB
A MAN AND NO TUB

Dear Son: (the letter read) Your Mother laughed over your note, how you enjoyed a "swell" bath in that water-hole,—and smiling, through tears, said,—"and to think he's the kid who always hated to wash his neck." Yours, Dad.

In the sandy wastes of raw Tunisia, across the sweaty jungles of primitive Africa, amidst the tropical lushness of lonely, green, Pacific isles, in many parts of this mad, mad world, Americans are enduring primitive ways of living.

Someday those Yanks will return. They will return to America to pick up again the thread of civilian life, to build new homes, new home life.

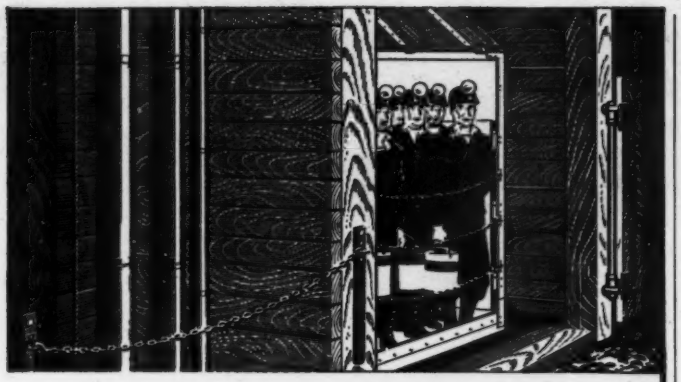
It is for that glad day that America has been busily working. Yes, many new building and plumbing products are ready now, waiting. Porcel-CLAD, the new *and better* hot water tank, with gleaming, sanitary, corrosion-resistant, porcelain enameled surfaces is ready, too,—proved and approved.

PORCELAIN STEELS, INC. • CLEVELAND, OHIO

Porcel-CLAD Tanks comply with U. S. Bureau of Standards' Commercial Standard, TS-3488. Automatic water heaters, gas and electric, will be available with Porcel-CLAD Tanks.

Porcel-CLAD
PORCELAIN ENAMELED INSIDE AND OUT
HOT WATER TANKS

Guaranteed for twenty years



WOOD Installed Years Ago is Helping the War Effort

A MINE SHAFT carries a lot of traffic. Through it travel the manhoist, skips and counterweights, plus piping and conduit, the manway and ventilating shaft. Construction has to be true, sturdy and dependable, in the face of conditions that are unusually severe—a lot of moisture is present, and exhaust air may carry fungus-forming spores.

WOLMANIZED LUMBER* has been widely used for this important construction as shaft timbers, planking and guides, in trestles and head frames, and as ties. The fact that it performs so well, under these adverse conditions, explains why service records on Wolmanized Lumber make such interesting reading.

PROLONGED LIFE of this treated wood greatly reduces the labor required for maintenance. Thus, the millions of feet of Wolmanized Lumber used throughout industry generally, for years past, are now helping to ease the manpower situation. New materials can go into other vital construction, and the money saved can help the war effort.

WOLMANIZED LUMBER is ordinary wood, "alloyed for endurance". Vacuum-pressure impregnation with Wolman Salts* preservative makes it highly resistant to decay and termite attack. In using it, you retain all of the advantages of working with wood—ease of handling and erection, light weight, strength, resilience, high insulating value. American Lumber & Treating Company, 1645 McCormick Bldg., Chicago, Ill.

*Registered Trade Mark

"Alloyed" FOR ENDURANCE

WOLMANIZED LUMBER

KITCHEN and dining alcove are separated by horizontally sliding glass doors. Dining table with decorated glass top

Glass Kitchen

THERE may be "nothing new under the sun," but there are plenty of revolutionary ideas for using old and familiar materials. For example, look at the "Kitchen of Tomorrow" illustrated here, which proposes glass uses in ways never before thought of. This kitchen has been created by Libbey-Owens-Ford Glass Company's Department of Design to stimulate ideas for post-war homes.

All essential equipment has been so designed that it may be closed when not in use. The dishwasher, built into the corner adjacent to the sink, and the sink are completely enclosed, the sink cover being planned so that when it is raised and slid behind the unit, it flashes light over the work area. A white Vitrolite undersurface serves as a splash panel. Foot pedals operate faucets, leaving hands free.

The cooking unit, also hooded and self-illuminating, does away with pots and pans and open burners. Instead, it is fitted with removable recessed utensils which do double duty as serving dishes at the table. The oven, covered by a steamtable-like hood of heat-tempered glass

CLOSE-UP of refrigerator from kitchen side, with transparent Thermopane doors. In center is revolving turntable for frequently needed foods. Above it is china storage cabinet with clear glass shelves.

built refrigerator, with china cabinet above, both having swings up against wall when not in use.

# of Tomorrow

providing full visibility, is also a griddle and barbecue.

The wall storage cabinet above the cooking unit uses a minimum of wood or metal, and a translucent glass panel at the top allows indirect lighting above to illuminate the interior. Sliding Flutex glass doors give an interesting pattern without being entirely transparent. Storage space for knives and other small utensils is in a hinged panel below cabinets.

Between sink and refrigerator is a stationary work top, with the drawer below, adjacent to the sink, for vegetable storage, clear glass dividers separating compartments.

The refrigerator, built directly below the service counter separating kitchen and dining alcove, has divided compartments and individual temperature controls, bulk storage space, and turntable sectional shelves of Tuf-flex or clear plate glass. The soffit of the cabinet above uses translucent figured or white Vitrolux glass, and allows indirect lighting unit above it to illuminate interior. Both refrigerator and china cabinet have doors on each side for accessibility from either kitchen or dining room.

COMBINATION oven-griddle-barbecue is part of stove which has recessed cooking vessels, built-in accessories. All cabinets and fixtures hung from wall at proper working level; ample foot space below.

From the start of the war, the demand for new military bases, new industrial plants and emergency housing has been constant and imperative. Striving to meet the demand, often under the most adverse conditions, has been a battle fought by "soldiers of construction." Their weapons are Tools, and the relentless enemy is Time.

These men know that without good tools, their skilled hands would be helpless. To meet this tremendous demand for portable electric tools, our manufacturing facilities have long-since "gone to war." When these soldiers of construction return to their peacetime jobs, Stanley Safety Saws and other Electric Tools will again be available for all. Stanley Electric Tool Division, The Stanley Works, New Britain, Conn.

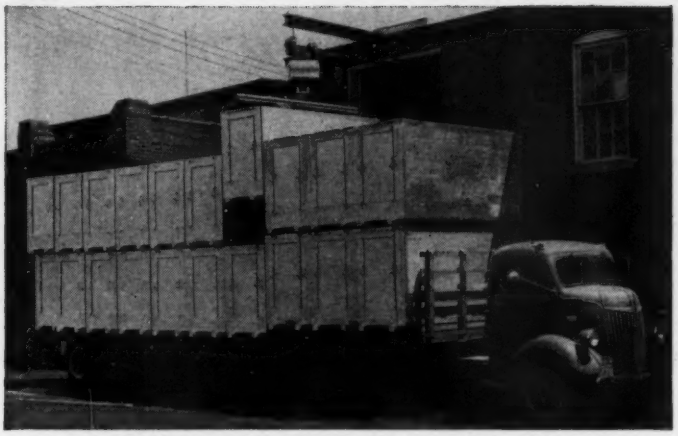
STANLEY ELECTRIC DRILLS pack the power for hard drilling jobs in wood or metal. They operate efficiently from standard power lines or portable generator sets.

STANLEY ELECTRIC HAMMERS, with the "Free Thrown Plunger," are time savers for vibrating forms, drilling, clipping, channeling in concrete, brick, and stone.

1843 STANLEY 1943

TRADE MARK

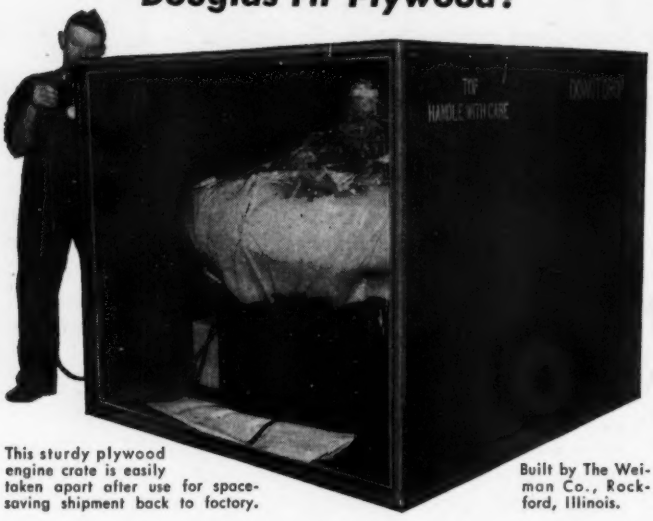
STANLEY ELECTRIC TOOLS



● Liquid-cooled Allison airplane engines are extremely valuable to the war effort. That's why they're protected from both weather and damage by re-usable Douglas Fir Plywood boxes constructed by Indianapolis Wire Bound Box Company.

Airplane engines arrive SAFE

...when shipped in crates built of Douglas Fir Plywood!



This sturdy plywood engine crate is easily taken apart after use for space-saving shipment back to factory.

Built by The Weiman Co., Rockford, Illinois.

● Millions of square feet of Douglas Fir Plywood are being used to crate engines and other aircraft parts, because this Miracle Wood offers more protection, reduces weight, saves space and gives numerous re-uses. New types of Douglas Fir Plywood crates and boxes are being developed — based on plywood's scientific advantages. After Victory, the results of this wartime crating work will be available to you — *another link in the steadily lengthening chain of technical data that will enable post-war Douglas Fir Plywood to serve you better and in more ways than ever before.*

TO HELP SPEED VICTORY the Douglas Fir Plywood Industry is devoting its entire capacity to war production. We know this program has your approval.

Send for Free War Use Folder

Actual photographs of scores of war uses show some of the ways you can expect Douglas Fir Plywood to serve you after Victory. Write for free copy. Douglas Fir Plywood Assn., Tacoma, Wash.

DOUGLAS FIR PLYWOOD

Real Lumber

MADE LARGER, LIGHTER
SPLIT-PROOF
STRONGER

American Builder HANDY-BOOK

HOW TO ESTIMATE QUANTITIES OF NAILS

AMERICAN BUILDER FOR AUGUST 1943

Length in in.	Approx. No. to Lb.	Nailings	Sizes and kinds of material	Trade Names	Pounds per 1000 ft. Board Measure on Center as follows: 12"	16"	20"	24"	30"	36"	42"	48"
2½	145	2	Siding, Drop, 1 x 4	8d siding			45		35			
2½	145	2	Siding, Drop, 1 x 6	8d siding			30		25			
2½	145	2	Siding, Drop, 1 x 8	8d siding			23		18			
2	236	1	Siding, Bevel, ½ & ⅝ x 4	6d siding			26		20			
2	236	1	Siding, Bevel, ½ & ⅝ x 6	6d siding			18		13			
2	236	1	Siding, Bevel, ½ & ⅝ x 8	6d siding			12		9			
2½	145	1	Siding, Bungalow, ¾ x 8	8d siding			17		12			
2½	145	1	Siding, Bungalow, ¾ x 10	8d siding			13		10			
2½	145	1	Siding, Bungalow, ¾ x 12	8d siding			12		9			
2½	145	1	Siding, Mt. Vernon, 8"	8d siding			14		11			
2½	145	1	Siding, Mt. Vernon, 10"	8d siding			13		10			
2½	145	1	Siding, Mt. Vernon, 12"	8d siding			10		7			
2½	145	1	Siding, Anzac, 1 x 8	8d siding			11		8			
2½	145	1	Siding, Anzac, 1 x 10	8d siding			9		7			
2½	145	1	Siding, Anzac, 1 x 12	8d siding			7		6			
			Casing, per opening	6d & 8d casing	About ¼ pound per side							
1½	778	16" o.c.	Lath, 48"	3d fine	6 pounds per 1000 pieces							

Short Cuts & Time Savers

American Builder's **Job Helps appear each month as part of an editorial series begun in the January issue. The purpose of this series of articles is to provide builders with practical "how-to-do-it" data for office or on the job.**

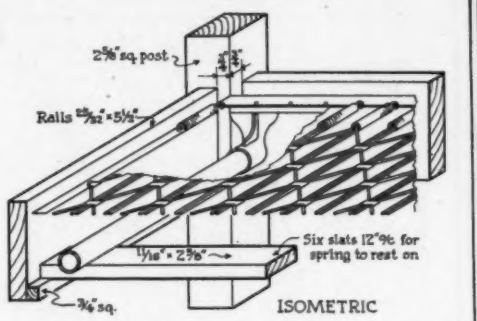
Some subjects covered in the series thus far are:

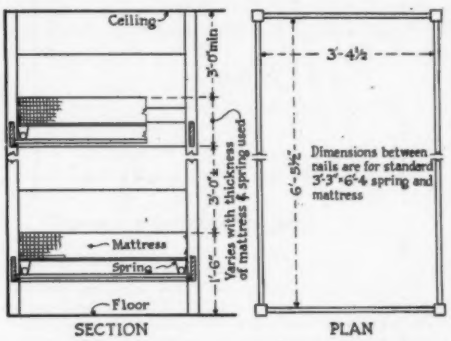
How to Estimate Roofing, How to Finish a Damp Cellar, How to Estimate Painting, How to Plan a Closet, How to Correct Faulty Hinges, How to Expose Wood Shingles, How to Mix Oil-Saving Lead-Oil Paint, How to Measure Rafter Cuts, How to Plan Minimum Bathrooms, How to Invent Color Schemes, How to Plan Animal Shelters, How to Lay Flagstone Walks, How to Build a Picket Fence, How to Re-roof with Asphalt Shingles, and How to Estimate Quantities of Nails.

OF JOB HELPS

HOW TO MAKE A 2-DECK BUNK

AMERICAN BUILDER FOR AUGUST 1943





Basic measurements for a 2-deck bunk are given here. Side rails can be made wider and cut out for improved appearance and drawers can be added under the lower bunk. Posts can be turned and ornamented and a ladder may be added.

A Continuing Editorial Service

"Job Helps" is a continuing editorial service feature appearing in serial page form monthly. The information is arranged in convenient 3 x 5 notebook page size so that it may be filed or used on the job. The sheets are not for sale or available from any other source than the editorial pages of *American Builder*.

Additional Job Help sheets appear on the following pages.

Among numerous letters commenting on this "Job Helps" department have been requests from builders for notebooks in which to file the sheets. *American Builder* does not have notebooks for sale.

Cabinet No. 103-W (right) Kiln dried hardwood; joints double locked, glued and tenoned; steel mirror frame.

Good Looking!

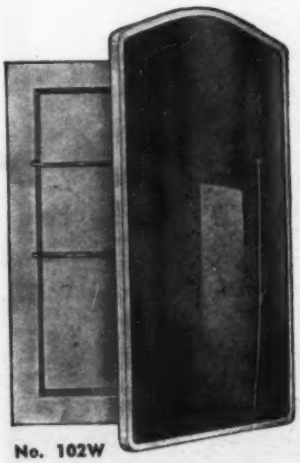
MIAMI *"STREAMLINED"* WOOD BATHROOM CABINETS

With production of famous MIAMI Metal Bathroom Cabinets necessarily discontinued for the duration, MIAMI Wood Cabinets are "filling the breach".

In present war housing, and for all essential replacements, these attractive Wood Cabinets are doing a serviceable job—and in addition are saving war-vital metals.

MIAMI Wood Cabinets are now available in quantity. They are modern "streamlined" design, with mirrors framed in *steel* (by permission of WPB). Complete in every detail, and equipped with convenience features that are standard in Miami Metal Cabinets.

Details and folder sent on request. Write Dept. AB



No. 102W

Some Models of MIAMI *Metal Cabinets*

are still available from distributors' stocks.

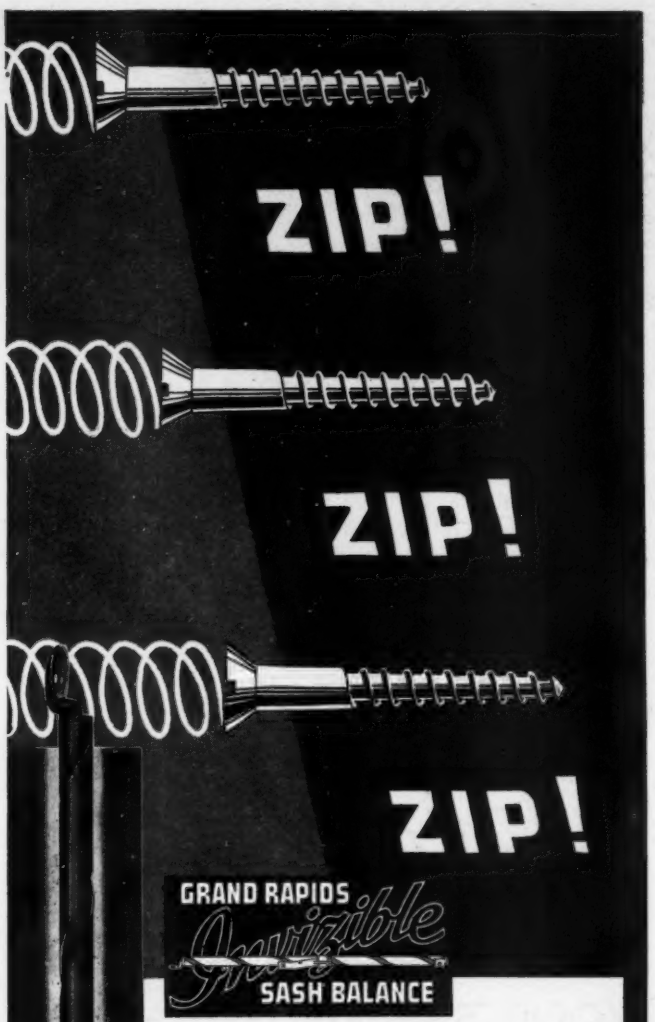
. . . and after the war we will again be in full production of fine MIAMI Metal Cabinets.

MIAMI CABINET DIVISION

The Philip Carey Mfg. Company

Dependable Products Since 1873

MIDDLETOWN, OHIO



GRAND RAPIDS *Invizible* SASH BALANCE

Time, ever an important factor in the consideration of profits, is now twice valuable in a world where even minutes saved is a pattern of patriotism.

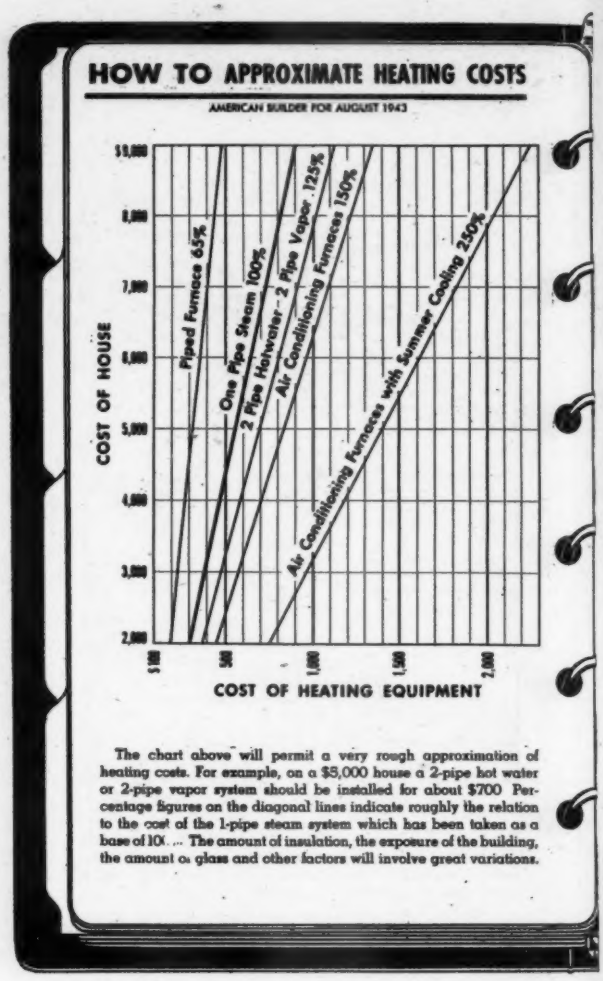
The simplicity, rapidity and ease of the installation of the Grand Rapids Invizible Sash Balance is but one of its more highly commendable features. Its smooth, dependable performance can be emphasized. The ease of tension adjustment, absence of tapes or cables, and the actual invisibility of the entire working mechanism are of primary importance to the contractor engaged in priority installations — and will continue to be in eventual post-war construction programs.

The saving and extra satisfaction realized on Grand Rapids Invizible installations has already been fully substantiated by the experience of scores of leading contractors.

Deliveries of Grand Rapids Invizible Balances are governed by government priorities. Send for catalog for full information as well as delivery details.

GRAND RAPIDS HARDWARE COMPANY
GRAND RAPIDS · · MICHIGAN

American Builder HANDY-BOOK



The chart above will permit a very rough approximation of heating costs. For example, on a $5,000 house a 2-pipe hot water or 2-pipe vapor system should be installed for about $700 Percentage figures on the diagonal lines indicate roughly the relation to the cost of the 1-pipe steam system which has been taken as a base of 100. ... The amount of insulation, the exposure of the building, the amount of glass and other factors will involve great variations.

Construction Activity for First Half of 1943

AS reported by the Department of Labor, new construction activity in the continental United States which amounted to 4.3 billion dollars in the first six months of 1943 is expected to decrease to less than 2.5 billion dollars for the last half of the year. Operating under stringent controls and faced with shortages in many lines of materials the construction industry put in place only 753 million dollars of privately financed work in the first half of the year; public construction, with the military and naval and industrial facilities programs nearing completion, totalled approximately 3.6 billion dollars in the first six months and probably will amount to not more than half that much in the remainder of the year.

Private construction continued the decline started in the last half of 1941 and is expected to drop below 700 million in the last half of 1943. Nonfarm residential construction fell to 334 million dollars in the first half of the year and should increase slightly in the last six months. Private nonresidential construction of 73 million dollars amounted to less than a fourth of the total for the first half of 1942. Farm and public utility construction both showed declines but further curtailment is not expected to be so great as in other types of private construction, as shown in table opposite.

OF JOB HELPS

HOW TO INTERCHANGE MEASUREMENTS

AMERICAN BUILDER FOR AUGUST 1943

LINEAR MEASURE

Inches	Feet	Yards	Rods	Furlongs	Miles
1	.08333	.02778	.0050505	.00012626	.00001578
12	1.	.33333	.0606061	.00151515	.00018939
36	3.	1.	.1818182	.00454545	.00056818
198	16.5	5.5	1.	.025	.003125
7920	660.	220.	40.	1.	.125
63360	5280.	1760.	320.	8.	1.

CUBIC OR SOLID MEASURE

1 cubic inch = .0005787 cubic foot = .000021433 cubic yard.
1 cubic foot = 1728 cubic inches = .03703704 cubic yard.
1 cubic yard = 27 cubic feet = 46656 cubic inches.
1 cord of wood = 128 cubic feet = 4 feet by 4 feet by 8 feet.
1 perch of masonry = 24.75 cubic feet = 16.5 feet by 1.5 feet by 1 foot. It is usually taken as 25 cubic feet.

GUNTER'S CHAIN

1 link = 7.92 inches = .01 chain = .000125 mile.
1 chain = 100 links = 66 feet = 4 rods = .0125 mile.
1 mile = 80 chains = 8000 links.

SQUARE OR LAND MEASURE

Square Inches	Square Feet	Square Yards	Square Rods	Acres	Square Miles
1	.006944	.0007716			
144	1.	.111111			
1296	9.0	1.	.03306	.0002066	
39204	272.25	30.25	1.	.00625	.00000977
6272640	43560.	4840.	160.	1.	.0015625
	27878400.	3097600.	102400.	640.	1.

1 square rood = 40 square rods.
1 acre = 4 square roods.
1 square acre = 208.71 feet square.

Estimated Construction in Millions of Dollars	1943			1942		
	Total	First half[1]	Second half[2]	Total	First half	Second half
Total new construction	6,763	4,309	2,454	13,691	6,024	7,667
Private construction	1,445	753	692	3,123	1,853	1,270
Residential (nonfarm)	674	334	340	1,460	938	522
Nonresidential (includes privately financed war plants)	121	73	48	542	354	188
Farm Residential	90	50	40	185	93	92
Service buildings	160	88	72	315	140	175
Public utility	400	208	192	621	328	293
Public construction	5,318	3,556	1,762	10,568	4,171	6,397
Residential (includes war housing)	640	375	265	542	174	368
Nonresidential (excludes industrial facilities)	35	17	18	135	89	46
Industrial facilities	1,446	1,056	390	3,602	1,576	2,026
Military and naval	2,356	1,641	715	5,062	1,737	3,325
Highway	372	192	180	664	530	334
Other public Federal	368	216	152	400	172	228
State and local	101	59	42	163	93	70

[1]Preliminary. [2]Forecast for the last half of the year.

Who wants *Sauerkraut* for Breakfast?

The answer is easy—practically nobody. Nor do most folks like to eat breakfast with the stale odor of last night's meal still hanging like a blanket around their nostrils.

Kitchen exhaust fans aren't exactly new. Victor was the outstanding manufacturer of domestic ventilators for many years before the war. But ventilation in the home of tomorrow won't be confined to the kitchen. Fresh, clean air will circulate through the entire house at the touch of a button.

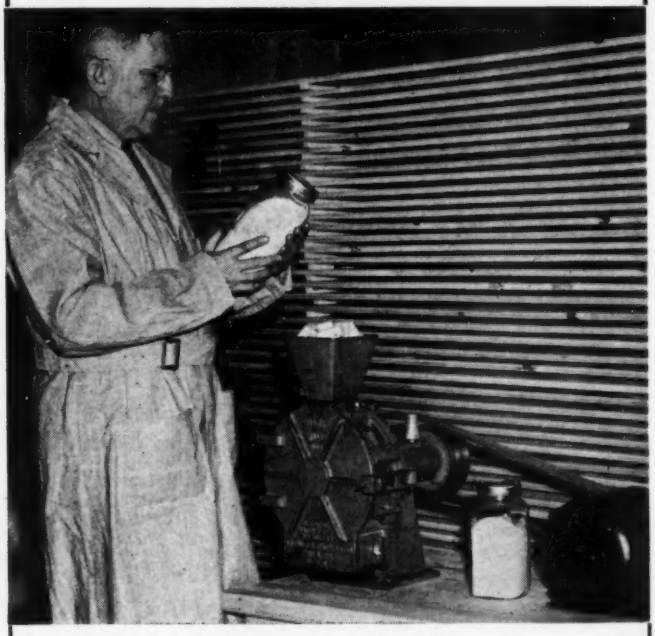
For the amusing but accurate picture of post-war ventilation, write for your free copy of the booklet, "You'll Do It 26 Thousand Times Today." Address Dept. IB-336.

Victor . . . solving tomorrow's ventilation problems today.

VICTOR ELECTRIC PRODUCTS, Inc.
2950 Robertson Road Cincinnati, Ohio

A JAR FULL OF SECRETS

In our Research Department we grind Western Pines as fine as sugar. Such granulation enables us to rapidly extract the natural oils, fats, waxes, turpentines and rosins contained in the woods. From these unusual processes, our laboratory staff discloses the secrets of Western Pines—hidden reasons for their fine performance in many uses.



In these wartime days, as in the days of peace, the Western Pine Association Research Laboratory is constantly experimenting to determine new values, new uses, and to improve manufacturing procedures for the Western Pines.

★

WESTERN PINE ASSOCIATION

Yeon Building, Portland (4) Oregon

*Idaho White Pine *Ponderosa Pine *Sugar Pine

*THESE ARE THE WESTERN PINES

FARM BUILDING

65—National Gypsum Co., Buffalo, N. Y. Three folders are available on the erection of three kinds of farm buildings, using mostly non-critical materials—brooder, poultry house and range house. Full working drawings are given inside each folder.

66—Portland Cement Assn., 33 W. Grand Ave., Chicago, Ill. "Plans for Concrete Farm Buildings" is the title of only one of several catalogs available on the construction of various types of farm buildings. Blueprints may be obtained for many of them.

67—Certain-teed Products Corp., 120 S. La Salle St., Chicago, Ill. A practical handbook of building materials available in place of critical lumber, plywood, corrugated steel, etc., is offered in "The Farmer's Wartime Handbook of Available Building Materials and Their Uses."

68—Johns-Manville Corp., 22 E. 40th St., New York. "The Farm Idea Book" is a 64-page handbook which offers ideas for roofs and their protection against fire and weather, ideas for sidewalls, insulation and ventilation ideas, ideas for interior walls, and for the farm home. Plans are also given for ten different kinds of farm buildings.

69—Johns-Manville has also issued a booklet, "Repair and Maintenance of Farm Buildings," which suggests how to repair farm buildings so that they will produce more under wartime conditions and will last longer.

70—Louden Machinery Co., Fairfield, Iowa. Data on installation of various equipment items for farm buildings.

71—Douglas Fir Plywood Assn., Tacoma, Wash. Technical data on specifications, uses, and booklets on application of plywood in the construction of farm buildings.

72—General Electric Co., Appliance and Merchandise Dept., Bridgeport, Conn. A 28-page booklet entitled "Farm Wiring Handbook" is a guide for planning electrical wiring on farms, covering the requirements of the average farm.

Available Only From Sources Mentioned

Southern Pine Assn., New Orleans, La. A book containing detailed working drawings and material lists for 48 smaller farm buildings is available at 15 cents a copy.

The F. E. Myers & Bro. Co., Ashland, Ohio. The care and maintenance of pumps and water systems is described in a 28-page manual. Price 10 cents.

Dierks Lumber & Coal Co., Kansas City, Mo. "Modern Farm Buildings" is a 64-page handbook giving valuable information on planning the farmstead, barn framing and details, dairy barn ventilation, bracing farm buildings, and presenting drawings of general, horse, and dairy barns, cattle and sheep shelters, hog and poultry houses, granaries and storages, and buildings for processing. Price, 50 cents.

Agricultural Engineering Development Div., Commerce Dept., Tennessee Valley Authority, Knoxville, Tenn. "Pumps and Plumbing for the Farmstead" is a 120-page book which has been prepared in an effort to provide condensed and practical information on water supply, pumps, hydraulic rams, plumbing, sewage disposal and bathroom planning. Price, 40 cents.

"Electric Poultry Equipment for the Farm" gives data on electric brooders and incubators, electric poultry equipment, poultry house wiring, and suggestions for home-made equipment. Price, 50 cents. "Wiring and Lighting the Farmstead" is a text on the fundamentals of wiring and lighting and their practical application on the farm and in the home. Price, 40 cents.

U. S. Department of Agriculture has issued considerable material in the form of leaflets, circulars and farmers' bulletins, and three plan books of farm buildings; Miscellaneous Publication No. 278 offers "Plans of Farm Buildings for Northeastern States," price, 50 cents; Miscellaneous Publication No. 319, "Plans of Farm Buildings for Western States," price, 60 cents; and Miscellaneous Publication No. 360, "Plans of Farm Buildings for Southern States," price 60 cents—all available only from The Superintendent of Documents, Washington, D. C.

Illinois Farm Building Plan Service has published a list of plans for food and crop storage space, structures for labor-saving and convenience in farm and home work, buildings for poultry, hog, dairy and beef cattle production, and designs to aid in repair and remodeling, all available at a nominal charge from the Department of Agricultural Engineering, College of Agriculture, University of Illinois, Urbana, Ill.

Midwest Plan Service, consisting of farm building plans cooperatively developed by 15 colleges of agriculture, is available from the Department of Agricultural Engineering, University of Illinois, Urbana, Ill. Price, $1.00.

All state colleges of agriculture and agricultural departments of state universities have available numerous leaflets, catalogs and blueprints of farm buildings of all types, which may be purchased at small cost.

AND PLAN DATA

73—National Electric Products Corp., Pittsburgh, Pa. "Farm Wiring Simplified" is the title of a booklet compiled in order to outline briefly the problems of farm wiring and to show how National Electric has tried and is trying to meet the growing demands and changing conditions of rural electrification.

74—Southern Pine Assn., New Orleans, La. has a plan book of barns and implement sheds. Each design is accompanied by complete working plans with suggested floor plan and material list—all printed on one sheet.

75—Armstrong Cork Co., Building Materials Div., Lancaster, Pa. "Improving Farm Output with Armstrong's Temlok Insulation" is a 24-page handbook on the proper insulation of farm buildings, as well as farm homes.

76—United States Gypsum Co., 300 W. Adams St., Chicago, Ill., has data, plans and details on the use of its numerous materials in the farm field.

77—Starline, Inc., Harvard, Ill. Catalog presents their line of farm building equipment and accessories.

78—Medusa Portland Cement Co., 1000 Midland Bldg., Cleveland, O. "Better Concrete for the Farm" is explained in a 16-page booklet which offers many detail drawings for various types of farm building construction.

79—Universal Zonolite Insulation Co., 135 S. La Salle St., Chicago. "Insulation on the Farm" is the title of a folder with which are included several guide sheets giving suggestions for the construction of insulated farm buildings.

80—The Electric Water Systems Council, 228 W. Ontario St., Chicago. How to take care of farm water systems is fully described in an owner's manual entitled, "Timely Tips on Wartime Care and Maintenance of Electric Farm Pumps and Water Systems."

81—Celotex Corp., 120 S. La Salle St., Chicago, Ill., has available literature on the insulation of farm buildings for greater profits, as well as plans for many types of buildings, such as brooder, hog and storage houses, and dairy barns.

82—Westinghouse Electric & Mfg., Co., East Pittsburgh, Pa. "Farm Motors, Their Care and Use in Wartime" gives information on the advantages of using electric motors, how to make both a small and a large motor portable, the importance of using correct pulleys, presents a wire size selection chart, and gives practical pointers on the care and repair of motors.

83—Insulite Co., Baker Arcade, Minneapolis, Minn. Literature on the use of Insulite wallboard in the construction of small farm buildings, as well as plans for their construction.

84—Weyerhaeuser Sales Co., 4-Square Farm Building Service, St. Paul, Minn., has available literature on the planning and erection of farm buildings showing proper framing and lumber sizes.

85—Masonite Corp., 111 W. Washington, Chicago, Ill. Wallboard and insulation board uses for economy and efficient production on the farm.

86—California Redwood Assn., Agricultural Dept., 405 Montgomery St. San Francisco, Calif. Bulletins and plan information on construction of small farm buildings.

SERVICE COUPON—CLIP and MAIL to CHICAGO

Readers Service Department, (August, 1943)
American Builder,
105 W. Adams St., Chicago, Ill.

Please send me additional information on the following product items, or the catalogs, listed in this department:

Numbers.....

Name.....

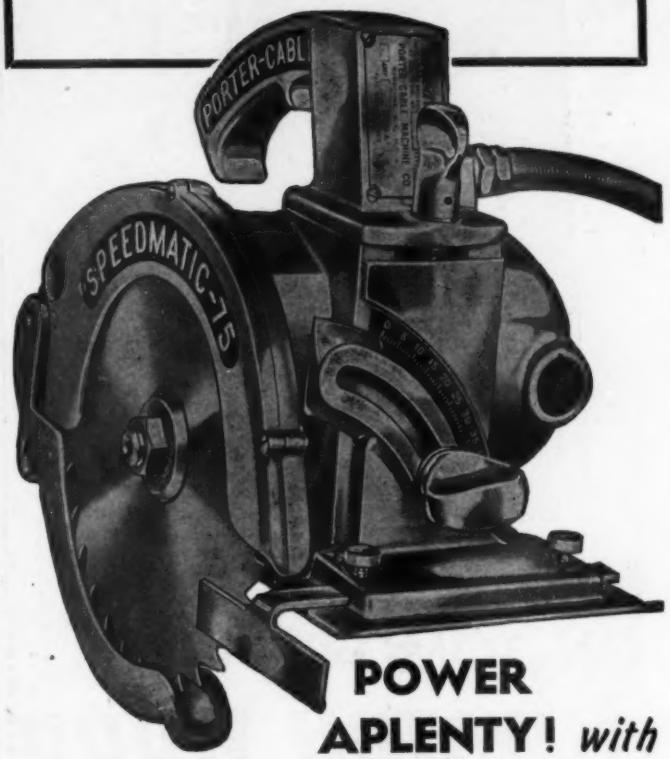
Street.....

City..... State.....

OCCUPATION*.....

*Please note that occupation must be stated if full service is to be given.

A Difference That **PAYS**



POWER APLENTY! *with*

Speedmatic

the faster, *true-balance*, one-hand saw

HERE'S WHY!

Only helical gears can deliver to the blade 98% of the power developed by the motor. Every mechanic knows that power applied in a *straight line* is more efficient than power that turns an angle.

In a Speedmatic, the straight line gear drive delivers 11% more of the motor power to the blade than any other method. With this higher efficiency of the helical gears giving you power to spare—the blade enters cut at 7,000 revolutions per minute—so fast it practically feeds itself! No overloading—no stalling.

The scientific design makes for perfect balance. The extra-wide shoe keeps the saw steady—gives its housing a sturdy base. And the natural position of the handle makes the saw easy for the operator to hold and guide—free from arm tension and wrist cramping.

See your local dealer or Porter-Cable representative (name in the phone book), or write us for descriptive literature.

PRESTO! A Bench Saw!

Speedmatic is actually two saws in one. With the Porter-Cable easy-slide, non-sag, ball-bearing Radial Arm, it's a great time saver on duplicate cutting. When you again need a hand saw, slip the Speedmatic off the Radial Arm in a few seconds.

PORTER-CABLE MACHINE CO.
1721-8 N. Salina St., Syracuse, N. Y.

FOR AN OUTLOOK ON TOMORROW

...WATCH WOOD

WHAT WILL YOUR CLIENTS WANT IN THEIR POSTWAR HOMES? Actual surveys now indicate two definite desires—better use of windows and better use of space. Both these needs can be well met, economically, satisfactorily... with wood—doors, windows, frames and other woodwork of Ponderosa Pine. Here's why—

Windows will make tomorrow's small homes seem more spacious—and windows of *wood* will keep them warmer! Wood is a *natural* insulating medium. Preassembled windows of Ponderosa Pine can be provided for a better fit—are easily weather-stripped—effectively reduce heat loss.

WEATHER-TIGHTNESS

Woodwork is today a better building material than ever—thanks to availability of toxic treatment! Windows and doors of Ponderosa Pine are easily painted—and *hold paint well.*

DURABILITY

Stock windows and doors of Ponderosa Pine are offered in a great variety of styles and sizes. Wood lends distinction to all kinds of architecture. Remember, wood has an appearance that has never been successfully imitated.

CHARM AND VARIETY

Wood frames are constructed to accommodate storm sash and screens without additional framing expense. Wood sash are quickly and easily installed.

ECONOMY

Ponderosa Pine WOODWORK

PONDEROSA PINE WOODWORK
Dept. YAB-8, 111 W. Washington Street
Chicago 2, Illinois
Please send me a free copy of "Open House."

Name.....

Address.....

City.....*State*.....

THE BEST IS YOURS... WITH PINE

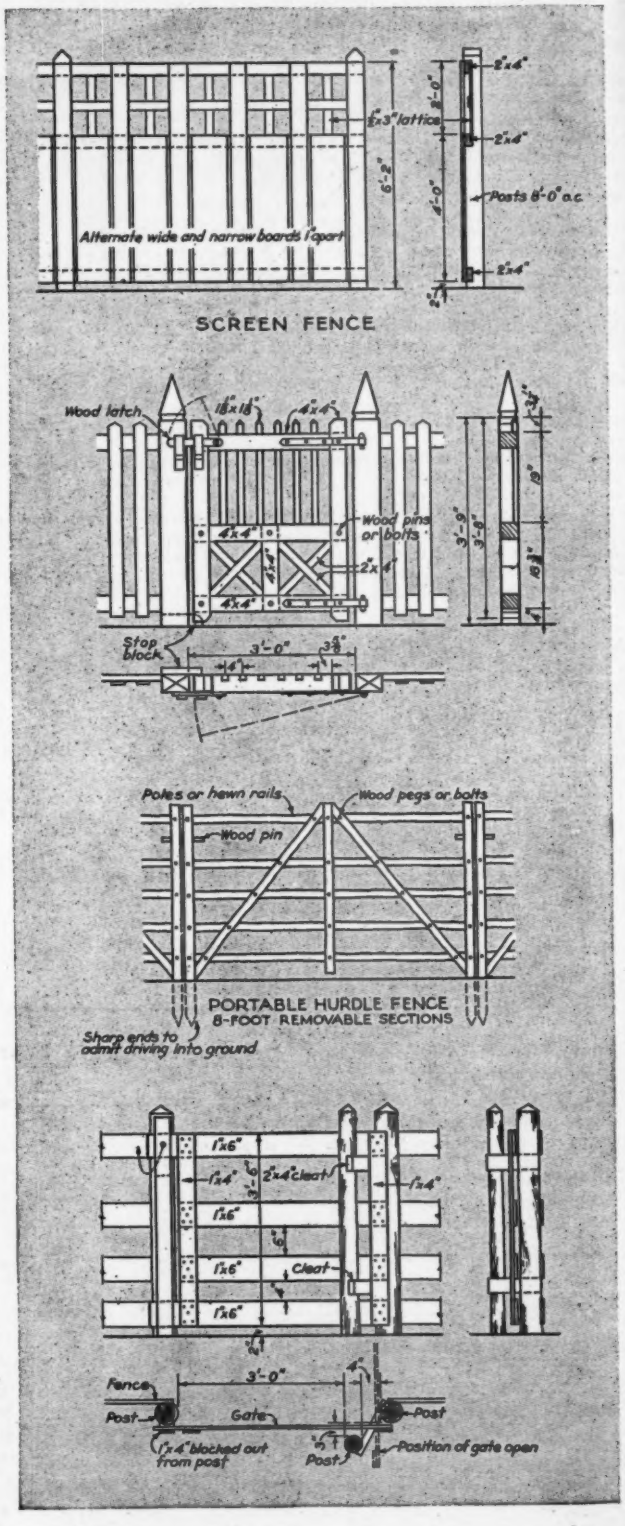
FREE BOOKLET

The "New Open House"—32-page idea book published by Ponderosa Pine Woodwork—is full of practical ideas you can use in planning postwar housing. You'll want this book for your file—mail the coupon today for your free copy.

Four Fence and Gate Designs Requiring Minimum of Metals

THE four fence designs below complete a series on enclosures; other material on this subject will be found in the June and July issues. They were all prepared by George L. Edick of the Agricultural Research Administration and are available from the Department of Agriculture in a folder entitled, "Wooden Fences and Gates," AWI-24.

Dimensioned drawings indicate how to build with a minimum of metal for accessories, some of which are made entirely of wood. This is an advantage today, as it will allow such work to go ahead and provide fill-in jobs for builders.



Foresees No Radical Plumbing Changes Immediately After War

STATING that he disagrees sharply with those who believe we face some kind of social revolution when the post-war period comes, Charles B. Nash, Director of Publicity, American Radiator & Standard Sanitary Corp., Pittsburgh, addressed the convention of the National Association of Master Plumbers recently on the subject of post-war planning.

"Although we are planning for a progressively better world in which to live," he said, "revolution is diametrically opposed to the peace and contentment all are seeking—whether it be social, political, or home-building revolution—and I would substitute evolution for revolution."

Nash asked if the men and women now serving America will, when they return home, want a country that has been "reformed, rebuilt, and radically changed in their absence," without a voice or a part in the transformation, and will they want "customs, conditions, and environment to which they will be strangers?"

Homes to Keep Individuality

On the subjects of post-war home design, construction and products, he continued, "I do not believe the American home will ever lose its individuality through prefabrication or mass production. We are not a people to be herded into rows upon rows of houses built primarily for economical reasons, at a sacrifice of our own individuality. For home is the one place in which we can work out our own individuality. And the right to work out our own individuality is too deeply rooted in the hearts of all Americans to be so easily brushed aside.

"During the past ten years or more, phenomenal progress has been made in home construction, particularly in the lower cost range. There has been a constantly growing trend toward home ownership. The lower the cost, the greater will be the number of people who can own their own homes. A nation of home owners will come nearer to solving many of our social and political problems than can be solved in any other manner. But let's not accept the idea that a low-cost home must be nothing more than a makeshift or shack.

"The art of home design, home construction, and the manufacture of materials and equipment for the home has so advanced during these years that a low-cost home can be made a thing of beauty and joy for many years. If there is an evolution in some of the materials that we employ normally in our processes of manufacture, if there is public acceptance or public demand for such materials, we are and will be flexible enough to meet such trends because we are a service industry. The real meaning of service, as I see it, is to give the public and the home owners the materials and equipment that will suit their individual needs best at the cost within their reach.

No Change in Distribution Methods

" . . . our conception of the post-war period does not call for nor contemplate any change in our pre-war method of distributing our products—from manufacturer to wholesaler to master plumber and heating contractor. That was our pre-war policy and shall be our post-war policy as long as determination of policy remains within our hands.

"As to post-war products, it is our opinion that they will be the 1942 models. Check the facts supporting that belief and you will learn that to go into war production, as is our present status, making vital parts for tanks, guns, planes, ships, and other war implements, it was necessary to convert our plants and develop our producing personnel and our thinking away almost entirely from normal production. We have enlisted for the duration. And when peace comes and war production shall have become history, time, money and energy shall be consumed in re-conversion.

"Introduction of new models, colors, and designs will follow in orderly fashion after that period. Our engineers, research men, designers, and stylists will then turn their energies into development channels, with appropriate and timely results."

TURNING out the tools of war in great quantities and on time is our prime responsibility. But that isn't all!

Not specifically mentioned, but nevertheless a very real part of our war contracts, is the duty to do the job at the lowest possible cost.

Take the case of the (CENSORED). On this one contract Lawson experience and efficiency made it possible to produce an important part of a war weapon at one-third of the previous cost. This means a real saving to every American taxpayer.

Tomorrow, when we again turn to the manufacturing of a complete line of bathroom cabinets, this experience will help us to make better cabinets for you at lower cost.

The F. H. LAWSON CO.

Bathroom Cabinet Division

Cincinnati, Ohio

Lawson BATHROOM CABINETS
127 YEARS OF QUALITY

"The 'Old Man's' working on his post-war kitchens"

• Strong steel cabinets are an important part of those designs. They'll be vermin-proof, dust-proof and easy to clean. Drawers will not warp or rot. Doors will open easily and quietly. The finish will be smooth, flawless and durable—appealing to your customers.

• Many of these kitchen cabinets were made of ARMCO Prime Quality Steel before the war. Now this steel, like other ARMCO *special-purpose* metals, is "fighting" all over the world. But some day these war steels will be used for the products of peace . . . which is one reason why the "Old Man" is working overtime these nights.

• When peace comes there will be steels of great strength, durability and light weight. Manufacturers can design these into lighter and even more attractive kitchen cabinets and other household equipment—and give you greater opportunities for service and profit. The American Rolling Mill Company, 2221 Curtis St., Middletown, O.

THE AMERICAN ROLLING MILL COMPANY

SPECIAL PURPOSE ARMCO SHEET METALS

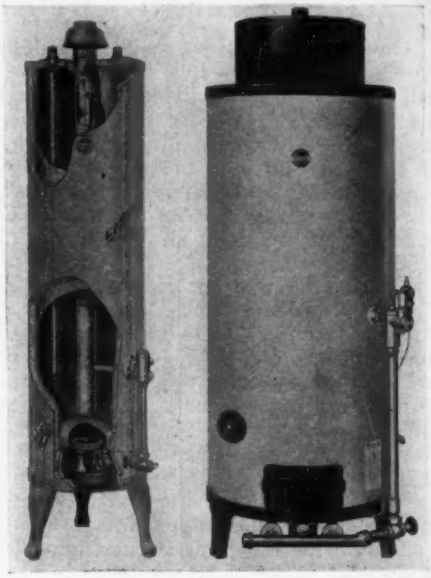
Products that Comply with

"War Model" Gas Water Heaters

THE Bastian-Morley Co., Inc., La Porte, Ind., has announced that its entire line of Crane gas water heaters has been reduced and standardized to conform to present wartime restrictions. The present line, in which each heater is appropriately called "War Model," consists of three models in a total of seven sizes, each model and size designed to fulfill most satisfactorily the hot water requirements of its particular installation.

The Crane Champion (automatic) and Marvelous gas water heaters, each in 20-, 30-, and 40-gallon sizes, are designed for efficient, economical and dependable operation in domestic and small commercial and industrial installations.

The Crane Royal Booster and storage gas water heater, combining large storage capacity and big input, is built in 50-, 55-, 75-, and 85-gallon sizes. With input ratings up to 150,000 B.t.u. per hour and recoveries up to 210 gallons per hour, this automatic water heater is ideal for Army camps, Naval stations, air bases, mess halls, hospitals, war industries and other big installations.



CRANE "War Models": left, Champion gas water heater; right, Royal booster and storage heater.

Wherever possible, non-critical materials have replaced critical metals in the construction of these heaters. Cast iron has been used to a great extent to replace brass; steel has replaced copper; and a hard, fireproof fibre board has been substituted for the pre-war steel outer casing.

Fireproof Building Slab for Floors and Roofs

THE Porete Mfg. Co., North Arlington, N.J., has announced its improved slabs made of Porex, a non-critical material of mineralized wood fibre and portland cement, set and cured under pressure.

The slabs are 20" x 80" x 1¾" and 3" thick. They are laid on top of purlins at from 16" to 40" centers and covered with a cement finish. On roofs this results in a permanent, fireproof, lightweight roof, giving good heat insulation, and offering good acoustics and sound absorption in such places as machine and fabricating shops.

All-Purpose Sheet Metal

A NEW sheet metal which is taking the place of galvanized metal is being produced by Cheney Metal Products Co., Trenton, N.J., by combining sheet steel with stearine-cottonseed pitches and pulverized slate.

The metal forms easily into warm air heating or ventilating

War Building Standards

ducts, flashings, valleys, gutters, metal roofs, down-spouts, termite shields, expansion joints, and all general sheet metal work. It can be sheared, bent, Pittsburgh locked, mallated, die formed, riveted, soldered, and worked with regular shop tools. It has been thoroughly tested against weather, moisture, heat, cold, fumes, salt air, and fire.

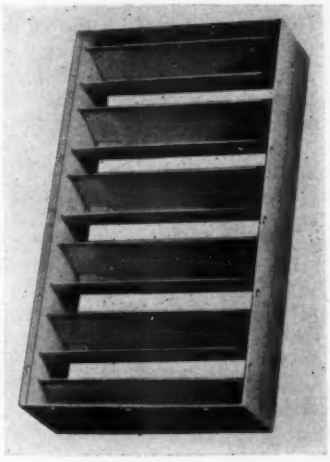
Cheney metal weathers to a pleasing grey color; because no asphalt or coal tars are used, bleeding is eliminated and it can be painted any color direct to the metal.

FLAT sheet of Cheney metal as seen through magnifying glass.

Diffuser for Air Distribution Systems

AN air diffuser called Volocitrol has been designed by the Barber-Colman Co., Rockford, Ill., to provide positive and adjustable control of air volume, pressure, and distribution across a supply outlet. It supplants splinters, volume dampers, and similar devices in balancing of air distribution systems.

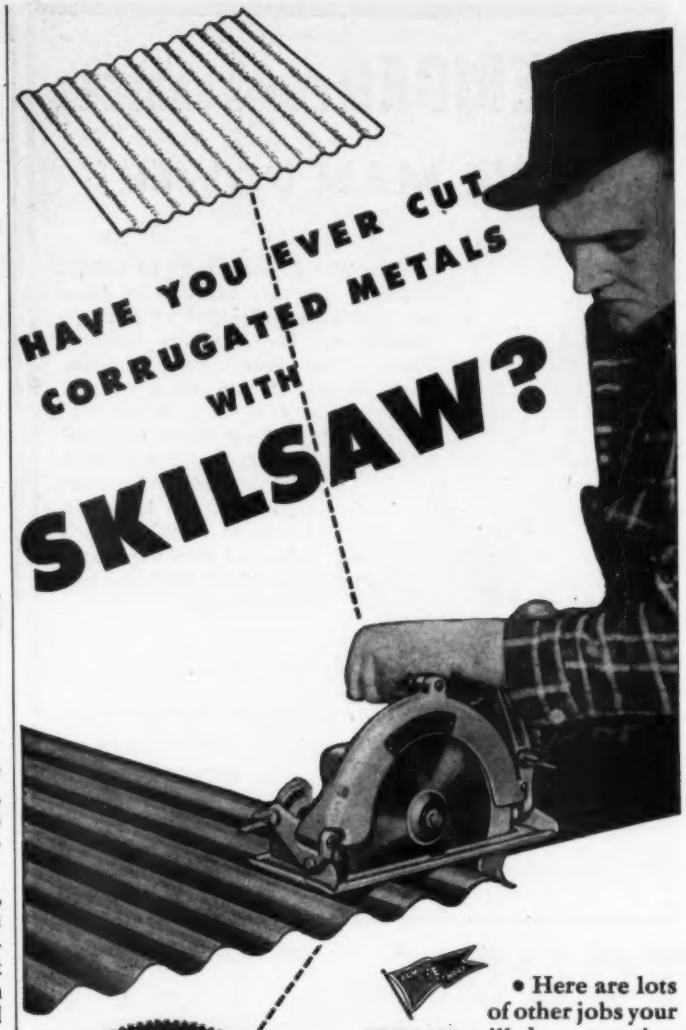
The frame of Volocitrol is of 16 gauge steel 2⅛" wide, and the pivoted louvres are of 24 gauge steel. Friction pins on each louvre allow it to be set by hand and positions are maintained when once set. A fireproofed felt edging strip to fit between the frame of the Volocitrol and the duct is furnished as standard.

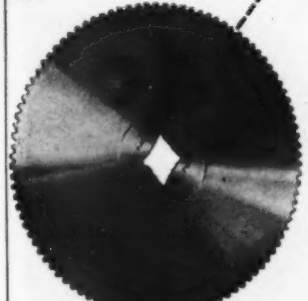


REGISTER which provides adjustable control of air.

National Gypsum Director for Post-War Products

THE National Gypsum Co., Buffalo, N.Y., has appointed a member of its staff to the position of Director of Post-War Planning, it was announced recently. W. L. Jurden, formerly production manager for four of the company's plants, has been put in charge of plans for the post-war market in which many of the products developed by the company's research laboratories for wartime construction will be utilized in rehousing America.





• Here are lots of other jobs your SKILSAW will do . . . easier, better, *faster!* With a FRICTION BLADE (illustrated at left) SKILSAW swiftly cuts flat or corrugated metals for siding or roofing . . . formed decorative bars for store fronts . . . stainless steel, brass, lead and iron. Of course, with its regular lumber-cutting blade, your same SKILSAW still speeds all the jobs you've always used it for. • Now is the time to learn about *all* the different work you can do with SKILSAW . . . to cut costs on more operations . . . to save time . . . to get yourself bigger, more profitable contracts in the days to come. Ask your distributor for a demonstration NOW!

With a FRICTION BLADE, SKILSAW swiftly mitres a decorative metal molding.

SKILSAW, INC., 5031 Elston Ave., Chicago

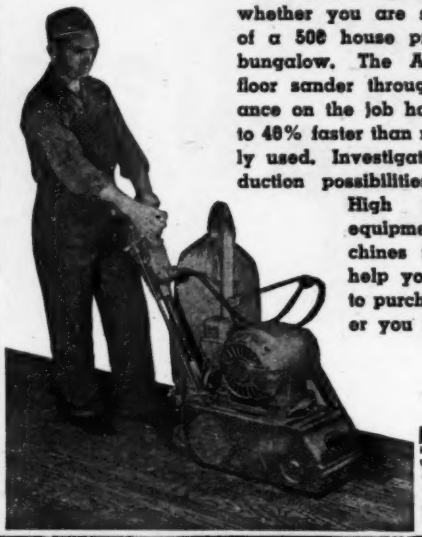
New York • Boston • Buffalo • Philadelphia • Cleveland
Detroit • Indianapolis • St. Louis • Kansas City • Atlanta
New Orleans • Dallas • Los Angeles • Oakland • Portland
Seattle • Toronto, Canada

SKILSAW PORTABLE ELECTRIC TOOLS

★ MAKE AMERICA'S HANDS MORE PRODUCTIVE ★

AMERICAN FLOOR SANDERS

SAVE MAN POWER!



The War Program calls for SPEED, whether you are sanding the floors of a 500 house project or a single bungalow. The American Standard floor sander through actual performance on the job has proven itself 25 to 40% faster than machines previously used. Investigate the greater production possibilities with the latest High Speed American equipment. We have machines in stock and will help you obtain authority to purchase the floor sander you need.

WRITE TODAY FOR DETAILS AND PRICES

The AMERICAN FLOOR SURFACING MACHINE COMPANY

511 SO. ST. CLAIR ST. TOLEDO, OHIO

TOUGH STUFF

3-M ADHESIVES are made to make things STAY PUT!

— for example adhering acoustical tile, wall board, or as a sealant under metal and plastic mouldings in modern homes and office buildings and their furnishings.

The 3-M Line includes more than 700 adhesive coatings, impregnating fluids, sealants and sprayon insulators developed to meet today's needs for speed . . . toughness . . . dependability. A 3-M Adhesive engineer will be glad to help you select the ones best suited to your needs.

MINNESOTA MINING & MFG. CO.
ST. PAUL, 6, MINN.

Gentlemen: AB 843

Please have a 3-M engineer call to discuss our adhesive needs.

Name.....

Department.....

Company.....

Address.....

City.....

Zone..... State.....

Ease Housing Restrictions

(Continued from page 25)

proportion of rental quarters than was customary in pre-war private home building operations," Mr. Blandford has explained.

"However, under the new regulations builders can sell a substantial portion of their new dwelling units immediately upon completion, if a sales market for the houses exists among the eligible immigrant workers in the community. Moreover, their remaining units can now be sold to eligible tenants after two months' rental occupancy, provided the tenants wish to buy."

The sale of dwelling units under the new one-third sale provision must be consummated within fifteen days after the Federal Housing Administration makes its final completion inspection of the property to determine compliance with priorities provisions. If the units are not sold within that period they will become subject to the two months rental requirement period.

* * *

Insulation Application Essential

(Continued from page 25)

cooperate in the current official fuel conservation campaign of the OWI, in spite of the critical gasoline situation.

Orders for home insulation have reached an all-time high for hot weather business, contractors and dealers are reporting, and the trend is expected to continue as the OWI's *"Prepare For Winter"* program moves into full stride. The Office of Program Coordination announces that an extra week of radio support has been obtained with the addition of the week of August 9 to the schedule. During this period the "winterizing" theme will be carried via OWI's Station Announcement Plan over 891 local radio outlets throughout the country.

Early in August, a packet containing mats for six nucleus 600-line advertisements in cartoon technique, proofs of a suggested page layout containing surrounding advertisements of local contractors, dealers and lending institutions, and a number of selling aids will be sent to newspapers throughout the country.

The Government-sponsored messages, signed by the Office of War Information, forcefully dramatize the need for fuel conservation this winter and spell out steps householders must take (application of insulation, storm sash, weatherstripping, calking, etc.) *now* so that orders may be scheduled for completion before the cold weather starts.

The local dealer ads which the newspaper will sell, to surround the central goodwill advertisement, will tell homeowners where such products and services may be obtained. Most manufacturers of insulation provide a mat service that will be useful in tying in with this unique campaign. Special press releases from the OWI will enable newspapers to complete their weekly "winterizing" pages with timely editorial copy.

* * *

Standardized War Models to Aid Private Builders

(Continued from page 30)

ber could be pre-cut in a central shop, loaded on trucks and delivered to the sites for erection without use of a saw. Lumber required is only 3.6 feet to the square foot of floor area. By the clever arrangement of kitchen and plumbing facilities use of critical materials was cut to only 377 pounds, which includes 22½ feet per unit for water and gas to the street.

Three prominent, experienced men have pooled their resources, equipment and experience to provide war housing, using this standardized model. President of Home Builders Supply is Grover D. King, a former chief underwriter of FHA and builder of 800 houses before Pearl Harbor. Hooper D. Churchill, vice-president, has built more than $15,000,000 worth of multiple and single family dwellings in the past 23 years in California. H. C. Roberts, secretary-treasurer, also has a long and successful record

in home building, representing some 400 houses in various developments.

One of the first major jobs of Home Builders Supply was the Oxnard, Calif., project of 177 units which was completed in three months working time. On this project all lumber was pre-cut in a shop on the project. Experience showed, however, that the cost of housing men to do this work was high, and on later projects, therefore, all of the lumber has been pre-cut in a lumber yard in Los Angeles and trucked to the job. According to Grover King this method has saved many thousands of dollars.

King describes the pre-cutting methods and other construction details as follows:

"In the yard we had six saws set up to cut each different length of studs, ceiling joists, plates, braces, rafters, etc. The top and bottom plate were then assembled and marked on a jig and numbered. A chart was kept for each building, and from this chart pieces were assembled in piles: three houses in one pile and two houses in another. The carrier truck would pick up these piles, load them on the lumber truck and then transport them to our projects in Hueneme and Oxnard. The only tool required in assembling these houses was a hammer, as no sawing was done on the job.

"The foundation and floor were of concrete slab construction. First the foundation and two inches of slab were poured into a movable form. After the concrete had set, two coats of Pabco asphaltic emulsion were sprayed on the floor. Then the second pouring of the floor was made to a depth of three inches, making the total slab five inches in thickness. The asphaltic emulsion served as an excellent water-proofing membrane and an expansion joint. No expansion joints were used in the first two inches of concrete. The second pouring of concrete in the three inch slab had expansion joints under the center partition and under the bedroom partition. This construction is new in these parts, but has proved very satisfactory.

"It is hard to explain the method that we used in handling the pouring of this concrete; I feel that the weather in various parts of the country would affect this, and can only be learned by experience in the localities in which it is used. The membrane is so waterproof that it took approximately four hours before the concrete would set, and when this concrete decided to set it would set in about twenty minutes, requiring four finishers to handle the finishing of this slab—which seems like a great number of finishers for the size of the slab. That is why I suggest that only experience could tell what would be required in a certain locality."

* * *

Rush Dry-Built Homes by Train

(Continued from page 37)

ing fastener which eliminates face nailing.

Floor sections, as built in the Tonawanda plant, are also complete. Each has oak flooring laid and a blanket of rock wool insulation installed between the joists. Ceiling sections likewise have rock wool insulation above the ceiling finish. Roof sections are complete except for roofing which is applied on the job.

According to the developers of this full wall system of construction, the result is a crack-proof, strong and permanently attractive house. Elimination of plaster, they say, means the elimination of tons of water literally brought into a house under construction. Surface nailing of the interior wallboard is eliminated since the material is held to the studding by the floating fastener which clinches into the back surface.

Wall panels are tied together by an ingenious tongue and groove system secured by a spline. In addition the entire house is tied together by a top plate deep nailed over the wall unit. The exterior siding arrives with the prime coat already applied and the interior surface is presized ready to receive the final coat of paint or wallpaper.

Panel sections for the houses are built on standard jigs in the shop according to a simple procedure available to any builder or dealer. The system is adaptable for use of local building interests as well as for the long distance operation employed in the 250-home Dayton project.

Build with Safety

ALBI-FIREPEL "S" is a fire retardant coating material designed to reduce the fire hazard of interior building surfaces and other combustible materials. Protects against the intense, sustained fire.

It is highly adhesive, will bond to wood, wallboard, sheathing, wood fibre material and metal. May be applied over a painted surface, highly moisture resisting.

Shipped ready to use, applied by brush or spray.

FOR PROTECTION against extra hazardous conditions or as a caulking compound can be supplied in concentrated form.

TESTED AND APPROVED BY Underwriters' Laboratories Inc. FOR PROTECTION AGAINST FIRE HAZARD

Send for Bulletins giving full information and results of tests—

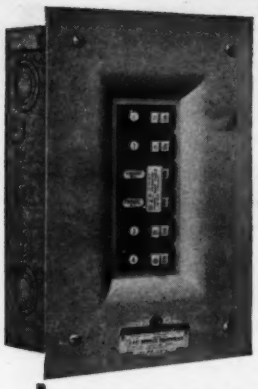
ALBI-firepel "S"

REG. U. S. PAT. OFF.

effective insurance against fire hazard

Albi Firepel Corporation

9 Park Place • New York 7, N. Y.



Pleasingly designed and finished, this FA Service Equipment combines FA D. P. 36 Amp. AC Thermag Circuit Breaker for range circuit, and 4 S. P. AC Thermag Circuit Breakers for light and appliance branch circuits (Cat. No. SE41-3L7F — list price $11.00.)

The "Load Center" is well-named

To it comes the main feed line for the electrical system. From it radiate the wires that carry current to the electric range — the lamps — radio — vacuum cleaner and other appliances that help make life more pleasant . . . When you build, choose wisely. Select

FA LOAD CENTERS SERVICE EQUIPMENT and PANELBOARDS

They are safe — will serve you uninterruptedly — require little or no attention — are efficient and attractively designed.

In Bulletin 63 and 67

you'll find them fully described and illustrated — with a wealth of detail as to specifications, wiring diagrams, etc. Write for your copies . . . Frank Adam Electric Company, Box 357, St. Louis (3), Mo.

U.S.A. THE SIGN OF A FA 1001 BETTER JOB
Frank Adam
ELECTRICAL PRODUCTS
FRANK ADAM ELECTRIC CO. ST. LOUIS, MO. U.S.A.

THIS RADIAL SAW does a BIG Job in a SMALL Space!

Although requiring only 4' x 5' floor space, the Walker-Turner Radial Saw is a complete shop in itself. It crosscuts, rips, dadoes, shapes, routs and tenons—on wood, metals, transite, tile and plastics—fast, accurately and economically.

Weighing less than 1,000 lbs., fully equipped, the Walker-Turner Radial Saw can, if desired, be transported from job to job, thus opening up new opportunities for war housing contracts. Ram moves in and out with finger-touch control; quick change-over from one operation to another; geared motor gets shaft close to work with greater economy in use of saws and wheels—many other features. Prompt shipment for war work. Send for literature. Walker-Turner Co., Inc., 1083 Berckman St., Plainfield, N.J.

walker-Turner COMPANY, INC. PLAINFIELD, N.J. U.S.A.
MACHINE TOOLS
DRILL PRESSES — HAND AND POWER FEED • RADIAL DRILLS
METAL-CUTTING BAND SAWS • POLISHING LATHES • FLEXIBLE SHAFT MACHINES
RADIAL CUT-OFF MACHINES FOR METAL • MOTORS • BELT & DISC SURFACERS

Protect Cattle and Sheep

(Continued from page 46)

structure is used only for a shelter, or they could be moved four feet from the rear wall to provide an alley.

A practical sheep shed as illustrated on page 46 is a standard design that can be lengthened to accommodate different-sized flocks. The 30-foot length of stable shown will provide for 40 sheep. The walk-through feed trough is easily filled from the feed room which is arranged at one end of the shed. Wire fencing can be used at open front to protect and control sheep.

Recent advances in sheep breeding are producing more twin lambs, and this calls for better shelters.

Bill of Materials for Cattle Shed on page 46

CONCRETE 1:2½:5 MIX

Walls & Piers	Feed Alley
53 sacks cement	48 sacks cement
5 cu. yds. sand	4½ cu yds. sand
10 cu. yds. gravel	9 cu. yds. gravel

LUMBER

6-2"x4"x16' plates	2-2"x8"x20' rafters
16-2"x4"x14' plates	100-2"x6"x14' rafters
12-2"x8"x12' plates	8-1"x8"x12' ridge
6-2"x6"x12' plates	8-1"x4"x12' braces
6-2"x8"x8' studs	5-1"x3"x10' trim
105-2"x4"x8' St., etc.	3-1"x4"x10' trim
15-2"x6"x8' posts	7-1"x4½"x10' trim
6-2"x6"x10' braces	4-1"x2"x14' trim
22-2"x6"x16' ties	15-1"x6"x12' trim
1600-ft. BM 1"x6" drop siding	
3600-ft. BM sheathing	
26 sq. roofing	
Doors	
80-ft. BM 1"x4" T & G flooring	
3-1"x6"x12'	4-1"x6"x14'
3 latches as preferred	
4½ pairs 6" strap hinges	

Windows

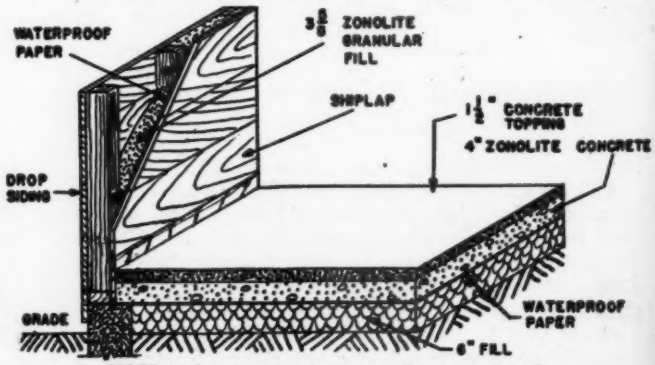
5 six light sash 10"x12" glass	
5 frames and trim	
10 spring bolts	
Feed rack	
55-2"x4"x10'	6-2"x8"x14'
14-2"x4"x12'	6-2"x10"x12'
24-2"x6"x12'	2-2"x10"x14'
18-2"x8"x12'	

MISCELLANEOUS

30 lbs. 6d common nails-siding
60 lbs. 8d common nails-sheathing
90 lbs. 16d common nails-frame & rack
28-⅝"x12" bolts for sills
5-¼"x1½"x30" strap iron for post
14-½"x 6" bolts for posts
27-½"x8" bolts for feed rack
27-½"x6" bolts for feed rack
190-lin. ft. 5" galv. gutter
40-lin. ft. 3" downspout
5-reducers
5-turn outs
10-60° bends
8-gals. mixed pant

Warm Floors for Livestock

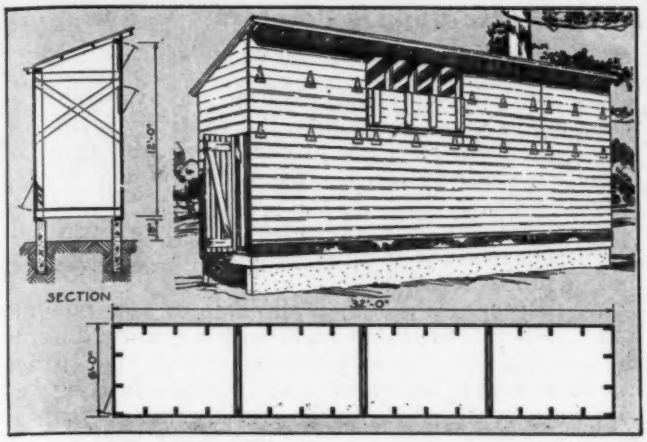
INSULATION to the city-dweller is an important home improvement, but to the farmer it is a money-maker as well. From farm home to hog house, there is hardly a farm building which cannot be made more profitable by proper insulation. Much has been said and written about stopping the heat losses through roofs,



HOW to lay a warm concrete floor, insulated.

ceilings and walls, but in livestock buildings it is a warm floor that's important; and that is where Zonolite insulation, a light-weight granular mineral substance, is attracting much favorable attention as builders and farmers are using it as a concrete aggregate to put a 4-inch "blanket" into their stable, stall and poultry house floors. Reports are that these insulated concrete floors of livestock buildings are warm enough in winter so that they keep above the dew point. This means that bedding on them does not become soggy and damp and need not be changed so frequently.

The accompanying detail shows cross section of such a floor with 4 inches of the Zonolite concrete topped by 1½ inches of dense concrete as a wearing surface.



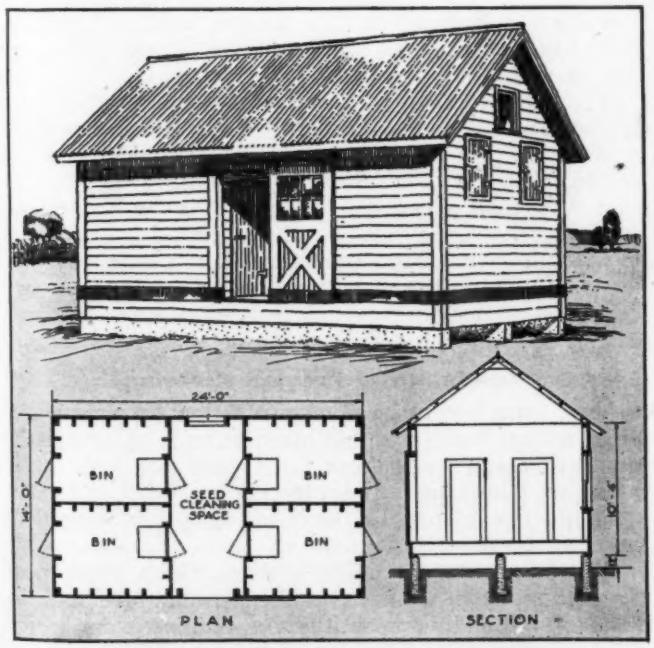
POPULAR corn crib for the feed lot.

Two Types of Buildings for Grain Storage

CORN CRIBS, granaries and a whole series of special-purpose packing and storage buildings for fruit, sweet potatoes, celery and other vegetable crops are on this year's building program. Here are helpful suggestions on two of these, with designs by the U. S. Department of Agriculture.

The farm crib shown is the high and narrow type to take best advantage of drying winds. The capacity for the 32-foot length is about 700 bushels of ear corn. The section drawing shows an effective method of rat-proofing. Wider cribs are permissible in dry localities; therefore this plan will vary in different states.

The 4-bin granary pictured is suitable for the farmer who has to store only a few thousand bushels of grain. The cross walls stiffen the building and provide four bins which may be filled through the outside doors. Each bin will hold about 450 bushels and in emergency about 780 bushels may be stored in the space intended for cleaning seed.



Each of 4 bins will hold 450 to 780 bushels.
GRANARY for farm storage of small grain.

REG. U. S. PAT. OFF.

SAMSON SPOT
SASH CORD

the most durable material for hanging windows

★

WHERE THE NEED IS GREATEST
Samson Braided Cords Serve Best
Now and Always

SAMSON CORDAGE WORKS
BOSTON, MASS.

Photo by Maynard Parker

Now devoted to war production . . . we are planning ahead for peacetime business. After Victory, look to Bennett for new advances in fireplace equipment.

BENNETT
FIREPLACE COMPANY
NORWICH, N. Y.

MODEL 85
CAPACITY 2¾"

with A MallSaw TRADE MARK

Light weight is combined with perfect balance to make this powerful, fast-cutting saw safe and easy to use with either hand. It will cross-cut or rip rough or dressed lumber, make complicated mitre cuts, pocket cuts, cut metal, cut and score stone, concrete, and tile with an abrasive wheel.

ARMY E NAVY

An award for work well done in providing tools for war.

A handy time and effort-saving tool for carpenters, builders, lumber dealers and others engaged in War Work. Three other models with 8", 9" and 12" blades and 2½", 3", 4⅝" cutting capacities also available for Victory Construction.

Literature and prices upon request.

MALL TOOL COMPANY
7737 South Chicago Ave., Chicago, Illinois

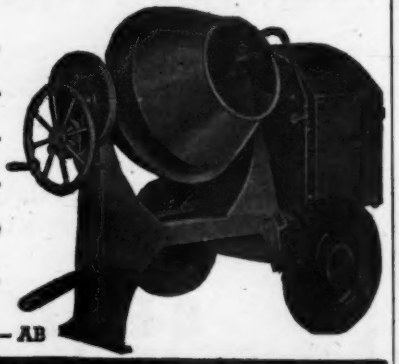
NON-TILTING PLASTER-MORTAR
KWIK-MIX 6-P

Fast discharge — 7 seconds — no tilting necessary — weighs only 850 pounds — air-cooled engine — V-belt and worm drive.

WRITE FOR BULLETIN NP — AB

3½-S TILTING KWIK-MIX

Side discharge — anti-friction bearings — welded construction — discharge either side — spring mounting.



WRITE FOR BULLETIN SD — AB

KWIK-MIX CONCRETE MIXER CO.
PORT WASHINGTON . . . WISCONSIN

Farm Water Supply Pointers

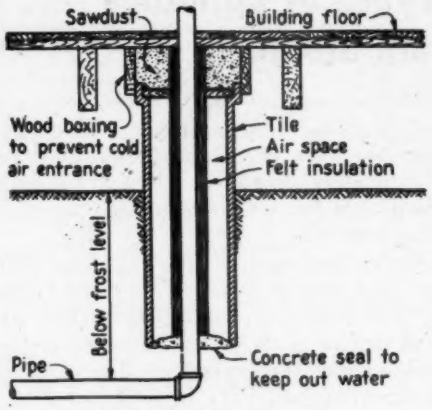
(Continued from page 49)

advise and possibly supply data on the availability of water in that area. Sometimes, at a relatively small cost, an old well can be made to provide an abundance of water, or a spring can be cleansed so it will develop a better flow.

Rural builders and contractors handling farm jobs are interested in the pumping equipment and pumphouse and its proper location.

Installation of a shallow well pump or a jet pump in a dry, well ventilated basement with a gravity drain to the ground surface is very satisfactory. A long suction line from well to basement is sometimes a limiting factor; but to some extent this is offset by the fact that the pump is usually three or four feet lower than ground level, if it is set on the basement floor, which gives that much advantage on the suction lift.

A deep well pump cannot be satisfactorily installed



INSULATING water pipes.

in a basement because the height between floor and ceiling is insufficient for removing drop pipe. Often a basement extension has to be built. This is simply an extension of the basement beyond the house foundation to form a small pump room.

Separate pumphouses are gaining in popularity. They are favored by health authorities. A well built pumphouse costs little more than a well built pit and has numerous advantages, such as ventilation, drainage and easy access to the pump for routine care.

Too often the top of a well casing is left open, permitting the entrance of dirt, rodents, insects, or surface water. Deep well pumps are often provided with a collar, which is part of the pump casting and will fit over the casing enough to provide some protection. Various other arrangements can be used, but one of the most sanitary is a cap of the type shown in an adjacent diagram. The rubber cushion is squeezed between two cast iron plates and forced tightly against the well casing and drop pipe. The resulting seal is watertight.

Insulation to Prevent Freezing

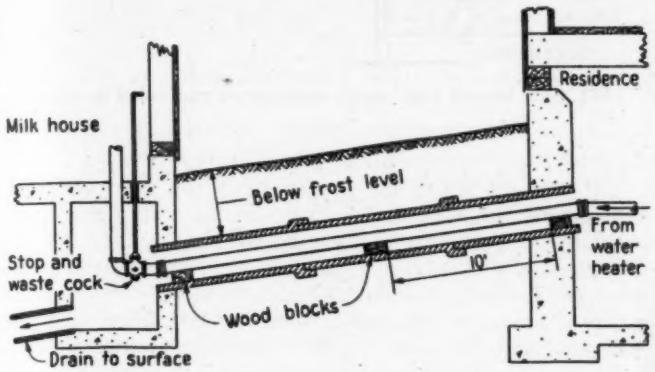
Most farm homes have no protection for cold water pipes within buildings, and often none is needed if the foundation and walls around the pipes are tight or if a furnace is installed. If protection is needed, it is common practice to use 1¼-inch felt or other equivalent covering on the pipes.

A suction line or delivery pipe which must pass through an exposed space between ground level and the floor of a building constitutes a real problem which many farmers have not solved satisfactorily. One of the more successful systems is shown in the accompanying detail.

It is sometimes desirable to run a hot water line underground between two buildings in order to prevent pipe freezing. For example, if there is a source of hot water in the farm house and hot water is needed in a milk house nearby, run the hot water supply through an underground pipe. By supporting the pipe on wood blocks in 4-inch tile, as shown, and draining the tile system, it is possible to have a satisfactory installation without too much heat loss.

The installation of a bathroom in a farm home is a type of improvement that is permanent and involves considerable cost; consequently it should be well planned.

In selecting the bathroom space the following conditions should be met as nearly as possible: (1) Locate near bedrooms; (2) have one entrance, preferably from a hall; (3) have minimum outside wall exposure; (4) install pipes on inside walls; (5) provide for access to pipes in wall; (6) provide for a linen closet; (7) if possible, have at least one window; (8) keep room reasonably small so it can be easily heated; (9) provide some means of supplemental heat if there is no central heating plant. If electric rates permit, an electric heater is desirable. If a range boiler is used in connection with a furnace or kitchen range, and the range boiler is in a position lower than the bathroom, the arrangement in the figure on page 84 is practical.



INSULATING an underground hot water line.

Builders active in the farm field will find many farmers who had an electric water system installed some years ago with the primary object of supplying water for the house, and later having it piped to the other buildings and feed lots. Now is the time to discuss such an extension with them. Many farm water systems have a reserve capacity that is frequently not utilized but

(Continued to page 84)

LOCAL SUBSCRIPTION AGENTS WANTED

American Builder is looking for a limited number of building men to serve as local subscription sales representatives in their home towns and nearby areas.

Applicants selected will be authorized to accept new and renewal subscriptions for American Builder on a liberal commission basis.

No previous subscription sales experience is necessary.

If interested, please write to American Builder, Circulation Department, 30 Church Street, New York, N. Y., informing us of your interest, the amount of time you have available to represent American Builder as a local subscription agent, and the cities or towns to which you would like to be assigned.

AMERICAN BUILDER, CIRCULATION DEP'T,
30 CHURCH STREET, NEW YORK

They'll want a **HEATILATOR Fireplace** *more than ever!*

Yes, the **HEATILATOR** surely proved its worth last winter!

● You're right, gentlemen. The Heatilator Fireplace will add a big selling point to the speculative homes you build after the war. For the Heatilator has proved all over America that its *circulated* heat helps to save fuel . . . helps to keep homes cozily warm during severe winters . . . and is invaluable in time of emergency fuel shortages.

HEATILATOR, INC.
618 E. Brighton Ave., Syracuse 5, N. Y.

HEATILATOR Fireplace

"JEWELS" *among Decorative Trims*

METAL TRIMS
trademarked
CHROMEDGE
Trademark Reg. U. S. Pat. Off.

Nothing can surpass *metal* for rich, lasting beauty . . . for unchanging strength . . . for harmonious contrast with every shade, color, texture, or material. And the *functional* advantages of metal trims trademarked CHROMEDGE — improved design and assembly features → make them the "jewels" among architectural trims. Their production is interrupted while we fill more urgent war needs, but peacetimes will again find them the builder's first choice.

*** Quantities of a few ROLLED METAL TRIMS can be delivered at once, from pre-war stocks. Write for bulletin!**

The* B & T *METALS COMPANY
Columbus 16, Ohio

When your post-war car is ready for her new home, Bilt-Well Carr-dor will again be a *must*. In the meantime, we know you will be satisfied to use only enough Bilt-Well woodwork to carry out your part in the war effort. Let us tell you just what items we can supply.

CARR, ADAMS & COLLIER COMPANY
Dubuque, Iowa

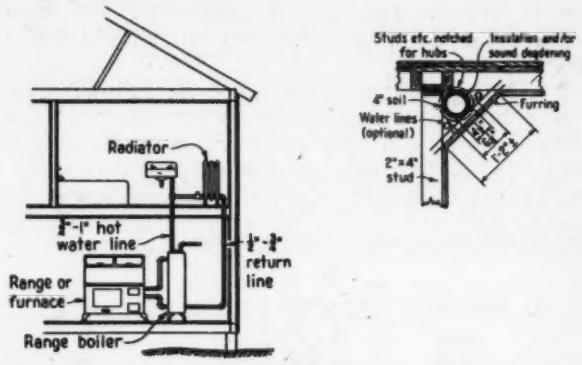
BILT WELL WOOD WORK
REG. U. S. PAT. OFF.

Farm Water Supply Pointers

(Continued from page 83)

could be employed at a cost of only a few cents a day to increase production and save labor.

Say to such a farm owner, "Why not let water run for you everywhere you can—to the barns, to the hen house, to the hog pen, to the vegetable garden? Also have hydrants placed so as to protect your buildings



LEFT, bath heated from range; right, pipes concealed in corner.

against the greatest danger on the farm—fire.

"If you let water do the running for you, you will conserve your time and energy, which today are more valuable to you and to your country than ever before. Put your electric water system on the same all-out basis of service that you demand of yourself.

"For a few cents a day, your present electric farm water system working at full capacity can be made to

Portable WAR HOUSE

This Portable War House, born of war-time urgency, but adequate for peace-time needs, is Houston Ready-Cut in tempo with the American sense of project.

At only **$300**, this house *"points the way"* in meeting the present urgent demand for low-cost housing for farm, industrial and military personnel. Completely prefabricated, easy to erect—takes four men three hours. Very fine construction at the price.

You owe it to yourself to ask us for folder giving full details on this great value.

$300 F. O. B. HOUSTON PLAN 43-1

Buy a Home in the Peace to Follow with the Bonds You Buy Today

HOUSTON Ready-Cut HOUSE CO.
Prefabricators Since 1917
POLK AVENUE HOUSTON, TEXAS

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FOR NEW ROOF CONSTRUCTION

Leading roofers all over the country now use ABESTO—no hot kettles, no hot mopping. Cold application method gives a better job. No scorched felts or coked asphalts.

Exclusive "VISCOROID" base gives greater adhesion and resistance to oxidation.

ABESTO is lower in cost, easy to apply, and requires less labor.

ABESTO means better roofs and gives the contractor a better margin of profit.

Write today for full particulars and specifications

ABESTO MANUFACTURING COMPANY
131 Wabash Avenue
Michigan City, Indiana

do many things for you to produce more food for Victory."

Milk is more than 87 per cent water. Therefore, whether cows are on pasture or in the barn, free access to clean water at all times produces the best results. Cows that have free access to water drink, on an average, ten times during 24 hours. Water available in drinking cups at all times may increase production up to 20 per cent as compared to watering twice daily. Equally important is the saving in labor when water is piped to the dairy barn. Time is too precious now to drive cows out of the barn to a tank, and to pump water by hand.

* * *

New Distributing Organization Formed by Two Plywood Manufacturers

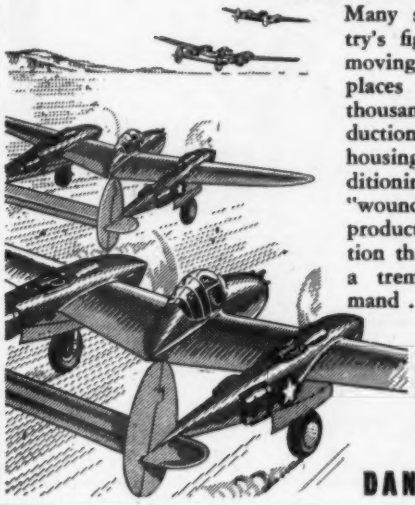
TWO manufacturers of plywood and plywood specialties, The Mengel Company of Louisville, Ky., and the United States Plywood Corporation of New York, on July 1 signed an agreement for the joint marketing of their products, including new products developed in their respective research laboratories.

According to their announcement, a new distributing organization, jointly owned and operated by the two companies, will be formed. This organization plans to establish new distributing units which, added to the distributing units presently owned by United States Plywood Corporation, will provide complete, nation-wide service, effect substantial economies, and insure the re-employment of a large number of employes now with the armed forces. At present the two companies are completely involved in war work but, as far as possible, preparations are being made for post-war developments.

On to New Fields!

Allith

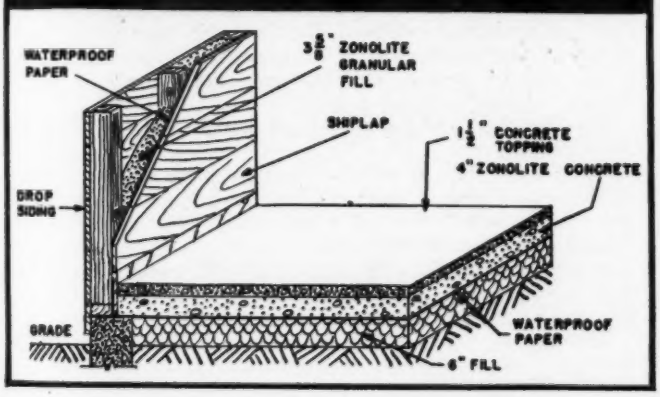
HEAVY DOOR HARDWARE



Many squadrons of our country's fighters and bombers are moving on to new fields. Their places are taken by increasing thousands of planes just off production lines. Adequate plane housing is a *must*—for reconditioning, for healing battle "wounds." That's where Allith production goes to bat—production that will be ready to meet a tremendous CIVILIAN demand . . . after Victory.

ALLITH-PROUTY, INC.
DANVILLE, ILLINOIS

Warm Floors for Livestock



Nowhere can insulation be used to greater advantage and actual cash profit than in structures housing livestock and poultry... Shown above is a typical floor and wall section of a farm building insulated with Zonolite.

Zonolite Concrete Aggregate used in place of sand and gravel in concrete makes a warm, dry, insulated floor, wall or roof for hog houses, poultry houses and dairy barns. Zonolite Granular Fill insulation, installed simply by pouring from the bag, makes farm service buildings warmer, drier—quickly pays for itself in higher animal production and lower mortality.

In each of its forms, Zonolite is featherweight, rotproof, fireproof, verminproof and permanent.

ZONOLITE INSULATION

SEND FOR FREE WORK SHEETS

Get a complete set of structural details for insulating all types of farm buildings. This invaluable file of material is yours for the asking.

UNIVERSAL ZONOLITE INSULATION COMPANY
Dept. AB8, 135 S. La Salle St., Chicago, Ill.

AVAILABLE FOR the DOORATION

KINNEAR WOOD ROLLING DOORS

For wartime needs! Space-saving WOOD doors featuring coiling upward action and other operating advantages of the 50-year-famous Kinnear *Steel* Rolling Doors! Any size. Motor or manual control. Write! The Kinnear Mfg. Co., 1560-80 Fields Ave., Columbus 16, Ohio.

Offices and Agents in Principal Cities

KINNEAR ROLLING DOORS

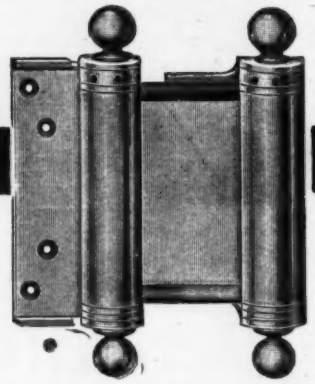
Choose . .

MILWAUKEE

Builders Hardware

FOR—Easier Installation Longer Service
Better Appearance Assured Satisfaction
Correct types and styles to fit ALL needs.

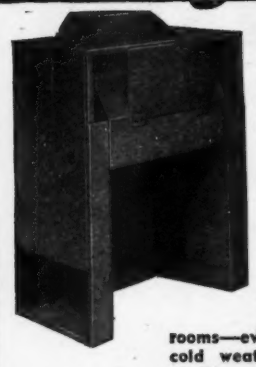
Here's the COMPLETE Quality Line that serves ALL your Hardware needs—for new building, repair and replacement in war housing, factories, public buildings, training camps and barracks. . . . A line that through the years has proved its superiority among Architects, Contractors and Builders. Use it to YOUR benefit!



MILWAUKEE "NU-JAMB" Double-Acting Spring Hinge. Requires no hanging strip.

MILWAUKEE STAMPING COMPANY
828-B South 72nd Street ● Milwaukee 14, Wisconsin

Majestic

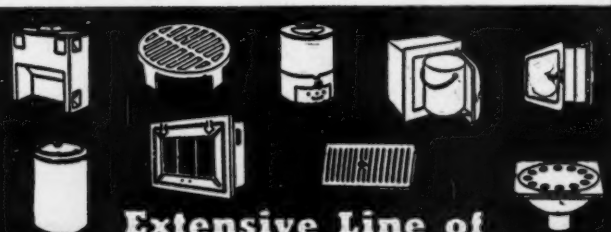


FUEL RATIONING HAS TAUGHT ONE LASTING LESSON...

FIREPLACES should HEAT

From now on, homeowners will demand *efficient* fireplaces! Majestic CIRCULATOR units really heat rooms—even entire small homes in mildly cold weather—because they circulate warm air like a furnace. Ingenious "Radiant Blades" boost heat generating surfaces 91%. Enclosed smoke domes, special built-in dampers, angles at sides and other exclusive features. Special frame design fits any type mantel. Write for details. The Majestic Co., 894 Erie Street, Huntington, Ind.

Majestic CIRCULATOR FIREPLACES



Extensive Line of Quality Building Necessities

Action Expected on the Farm Front

(Continued from page 43)

of Agriculture or your county agent, who is generally a member of this Board. The $1,000 limitation does not apply to repairs necessary for maintaining buildings in first-class condition, but only where the original design is altered or new construction begun. Improvements must be made with the least critical materials, and the use of native materials, such as stone and logs or used materials from the farm, will be a direct contribution to the war effort by conserving critical materials and transportation and will reduce the cost of construction appreciably."

Mr. Edick's design shows a typical average-size dairy barn, size 34 by 62 feet, two rows of stanchions, 24 cows, facing outwards. Wood stalls and pens, as shown in the details on page 42, are urged. The layout is planned, so it is explained, so that ultimately standard commercial metal stanchions can be installed. Metal drinking cups are provided, along with metal manger divisions, support columns, hay track, door and window hardware, litter carrier track and ventilating system.

The purpose of this recommendation is to point out how an average-size dairy barn can be built with but little metal and at the same time provide a structure that can be operated efficiently in a sanitary manner. Possible future improvement should be kept in mind when planning the barn, so that little or no alteration will be needed to make changes. Time and thought given to proper layout before beginning construction will save money in the long run and will eliminate many difficulties in making such changes.

The omission of metal details in the order discussed in the following figures will cause the least inconvenience, it is stated.

Masonry outside walls eliminate the use of 100 pounds of nails for a plan of this size and, if constructed properly, are reasonable in price, low in maintenance cost, and long-lived. Cinder or other lightweight concrete blocks and clay tile with air cells afford better protection against cold and condensation than most types of solid masonry.

If masonry walls are not sufficiently insulated, a ventilation system, even though otherwise efficient, will not remove excessive condensation on the cold surfaces.

Eighty pounds of metal can be saved if the window ventilator cheeks are of wood instead of galvanized sheet metal.

Wooden stalls as illustrated can be easily operated and kept in a sanitary condition. Their use will save 1,650 pounds of metal. Partitions of wood can be used if substantially built.

The use of wooden columns supporting the ceiling will save 450 pounds of metal.

Two hundred and ten pounds of metal can be saved if but one drinking cup is used for every two cows.

In effecting these temporary economies the farmer's builder should install sleeves, anchors, and other necessary parts for use in the installation of metal equipment after the war. Where wood is used, it should be installed with careful workmanship, finished nicely with rounded or chamfered edges, and kept well painted; otherwise it might need frequent repair, become insanitary and be unattractive.

Recognizing that farm building requirements vary widely

PAINE PERFORATED
★ HANGER IRON

AVAILABLE ON HIGH PRIORITY

Fig. 500 FOR Tying Rafters and Hanging Pipe and Duct.

This flexible, adjustable, perforated iron hanging strap is easy to cut off or bend to fit all requirements. Perforations speed up fastening. Furnished in 10-foot lengths only.

Ask Your Hardware Dealer and Write for Catalog

THE PAINE CO., 2959 CARROLL AVE. CHICAGO 12, ILL.

in different sections of the country, the Dept. of Agriculture at Washington, in co-operation with the leading state agricultural colleges and extension services, has prepared three regional selections of model farm structure designs, one for the Northeastern states, one for the Western states and one for the South. Local builders can and should adapt any of these to their own particular needs and conditions.

Two of the timely designs presented are shown on page 43, a 12-cow lean-to addition and a 20-cow free-standing stable, complete with silo and feed room. As to the lean-to shed, where more stall space is needed than the existing barn provides, a shed of this type would be of value until more permanent quarters can be justified. The drawings show how to build a lean-to against the barn to accommodate a row of stanchions. Standard dimensions should be used for the stall platforms to suit different breeds; any variation in the length of the platform will change the width of the litter alley unless the width of the shed is correspondingly adjusted. It is assumed that feed and hay storage will be available in a nearby building. Before selecting plans, milk-control officials should be consulted regarding sanitary regulations.

* * *

THE FARM ELECTRIC

(Continued from page 48)

how large the diversity factor will be. Except for small farms, service equipment should never be less than 3-wire, 100-amp. Follow local practice and requirements. Consult your utility.

The circuit panel boards in each building must be large enough to handle the connected load in the building. If this panel is located near the doorway of the building it can be used as a disconnecting means for the circuits. When this is desired, install panel boards with switch and fuse or with circuit breakers.

While it is not possible to list definitely the number of circuits needed in a home without knowing the requirements of that home, here are some suggestions that will serve as a guide. (1) *General Circuits*—Install at least one 15 amp. circuit for each 500 square feet of floor area. Arrange outlets so that two circuits reach every room. Kitchens, dining rooms and laundry rooms have heavier loads, so provide them with heavy duty circuits of No. 12 wire. Figure on extra load of 500 watts at least for each of these three rooms. (2) *Range and Water Heater Circuits*—Install separate circuits for each of these appliances except where they are interconnected by a double pole, double throw switch or by a peak limiter. It would be desirable, also, to install separate circuits for large motorized appliances such as dishwasher, etc. (3) *Pump, Oil-burner, etc. Circuits*—Install separate circuits for pumps, oil burners or automatic stokers and bathroom heaters.

SAVE TIME
in making layouts and in giving lines and grades
SAVE MONEY
by reducing labor costs by using a
WARREN-KNIGHT TRANSIT-LEVEL

Patented

This instrument gives you what you have always wanted in a low priced instrument—high power telescope—close focus—vertical arc with clamp and tangent—sensitive level—compass—plate level—protected circle—vernier reading to one minute—extra large shift—sturdy construction—low maintenance costs.

For complete details write for new Catalogue F-88.

Liberal allowance for your old instrument.
Prompt delivery on priority orders

Transit-Level No. 38-b
$160.00

Made also without compass and are at lower prices.

WARREN-KNIGHT CO. 136 N. 12th St. PHILADELPHIA 7, PA.

-protection in the public interest

to add to the life of combination doors

—to multiply their *double* usefulness, scientific research has developed minimum standards of *toxic preservation*—a treatment devised to increase resistance against deterioration that might occur because of the many extremes of climate and temperature to which they are subjected, in their year-round service.

NATIONAL DOOR MANUFACTURERS' ASSOCIATION
McCORMICK BUILDING · CHICAGO, ILLINOIS

Seal of Approval—The Identification of a Product Meeting N. D. M. A. Preservative Minimum Standards

LICENSE NO. 000 TOXIC–PRESERVATION APPROVED NATL. DOOR MFRS. ASSN.

FOR FURTHER INFORMATION SEE OUR CATALOG IN SWEET'S

AVAILABLE

If you have priority contracts we can still supply you with—

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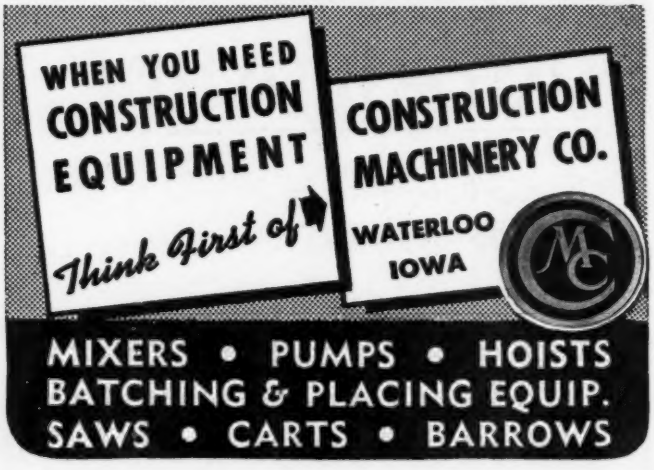

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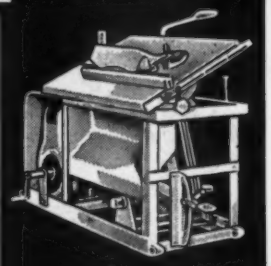

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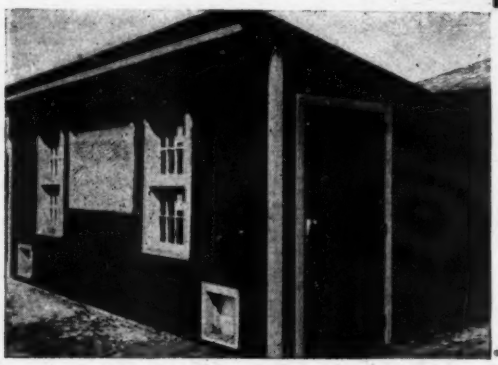

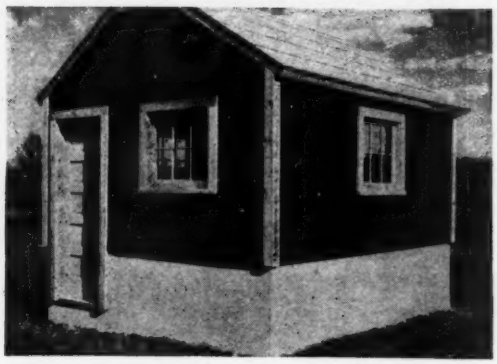

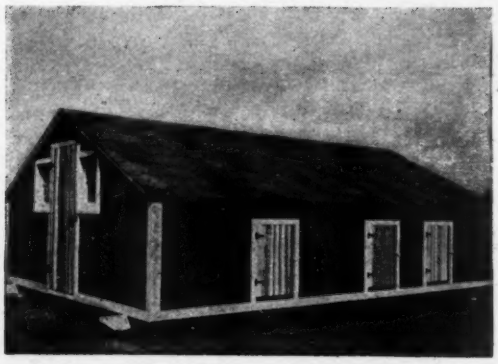

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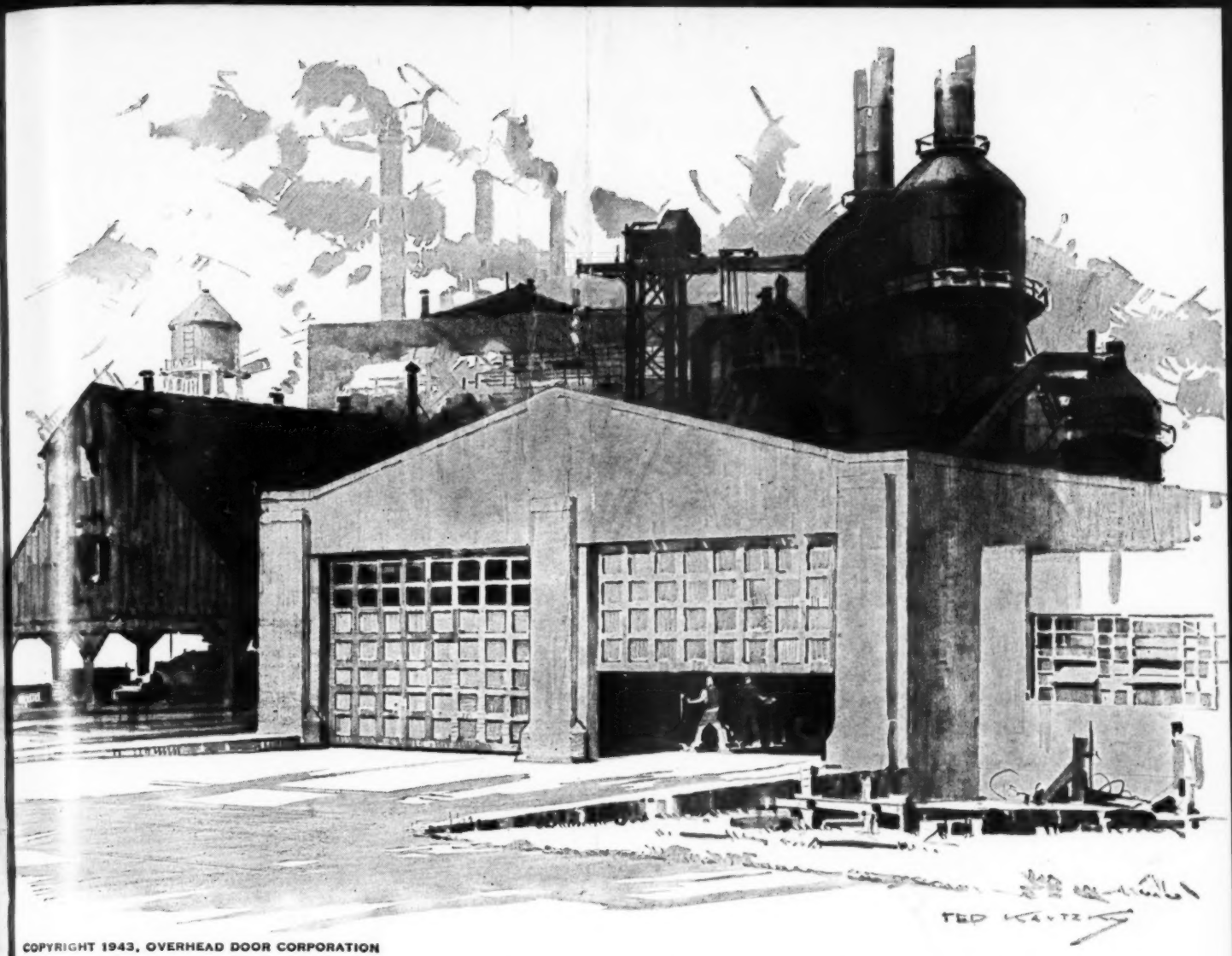

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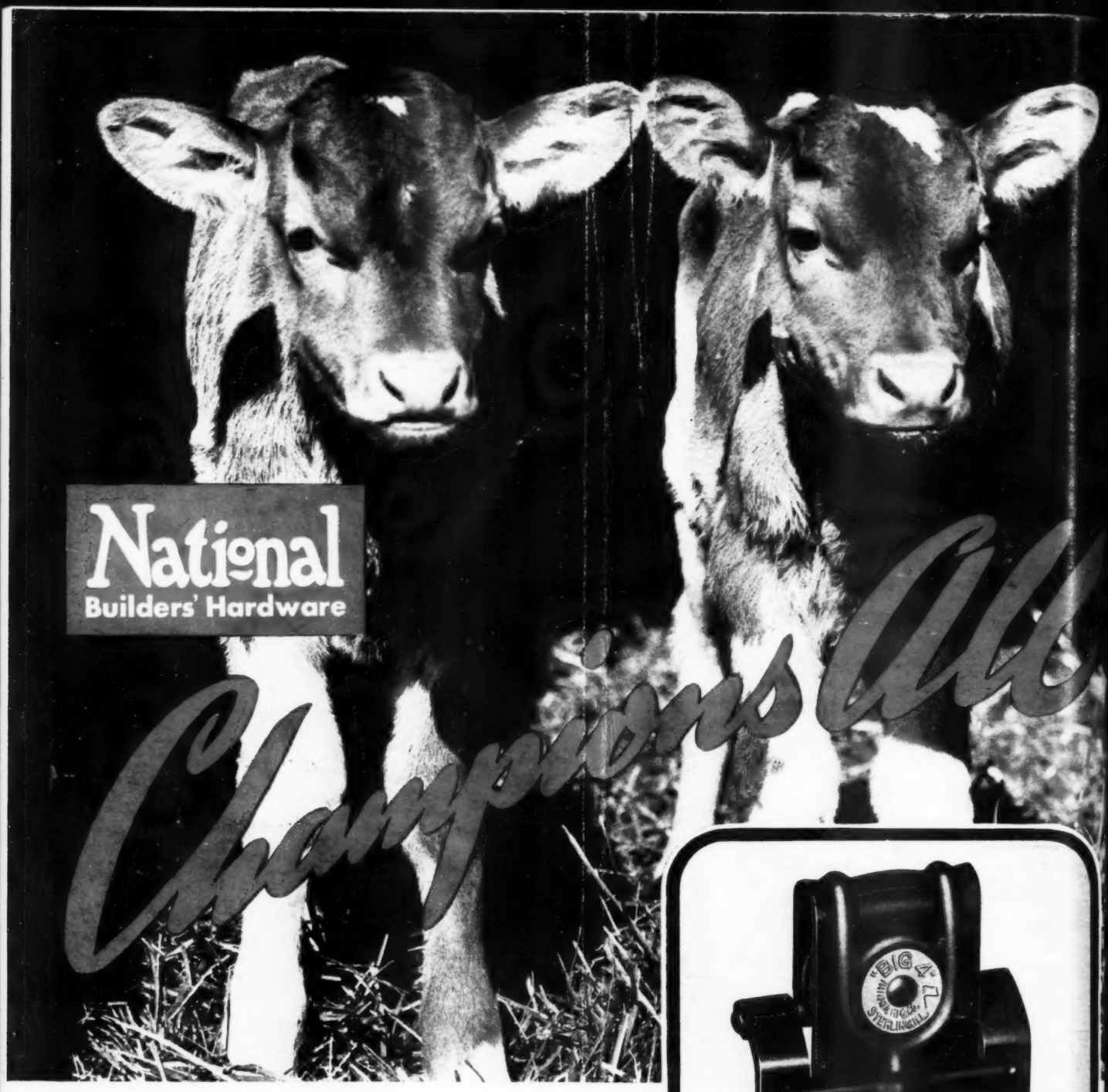

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